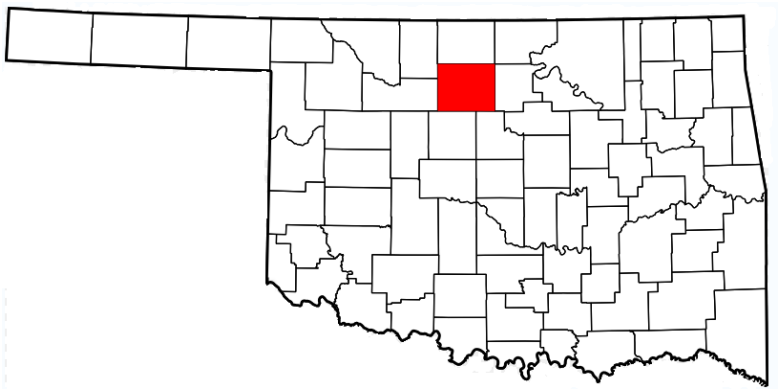
FLOOD INSURANCE STUDY

GARFIELD COUNTY, OKLAHOMA
AND INCORPORATED AREAS

Community Name	Community Number
BRECKENRIDGE, TOWN OF	400530
*CARRIER, TOWN OF	400526
COVINGTON, TOWN OF	400362
*DOUGLAS, TOWN OF	400531
*DRUMMOND, TOWN OF	400527
ENID, CITY OF	400062
*FAIRMONT, TOWN OF	400528
GARBER, CITY OF	400380
GARFIELD COUNTY, UNINCORPORATED AREAS	400473
*HILLSDALE, TOWN OF	400529
*HUNTER, TOWN OF	400286
KREMLIN, TOWN OF	400293
LAHOMA, TOWN OF	400294
NORTH ENID, TOWN OF	400425
WAUKOMIS, TOWN OF	400338



*No Special Flood Hazard Areas

PRELIMINARY DATE:
February 15, 2017

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
40047CV000B

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this Flood Insurance Study may be revised and republished at any time. In addition, part of this Flood Insurance Study may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the Flood Insurance Study. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current Flood Insurance Study components. A listing of the Community Map Repositories can be found on the Index Map.

Initial Countywide FIS Effective Date: September 27, 1991

First Revised Countywide FIS Revision Date: September 30, 1995

Second Revised Countywide FIS Revision Date: June 19, 2012

Third Revised Countywide FIS Revision Date: TBD

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FLOOD INSURANCE STUDY
GARFIELD COUNTY, OKLAHOMA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Garfield County, including the Cities of Enid, and Garber; the Towns of Breckenridge, Carrier, Covington, Douglas, Drummond, Fairmont, Hillsdale, Hunter, Kremlin, Lahoma, North Enid, and Waukomis; and the unincorporated areas of Garfield County (referred to collectively herein as Garfield County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Towns of Carrier, Douglas, Drummond, Fairmont, Hillsdale, and Hunter have no special flood hazard areas.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This study was prepared to include incorporated communities within Garfield County in a countywide FIS. Information on the authority and acknowledgments for each of the previously printed FISs and Flood Insurance Rate Maps (FIRMs) for communities within the county, compiled from their respective narratives, is listed below.

City of Enid: the hydrologic and hydraulic analyses for the FIS dated September 1978 (FIRM dated March 15, 1979) were prepared by the U. S. Geological Survey (USGS) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. IAA-H-17-75, Project Order No. 11. This work was completed in October 1976.

Town of North Enid: the hydrologic and hydraulic analyses for the FIS dated October 1, 1980 (FIRM dated April 1, 1981) were prepared by the USGS for the Federal Insurance Administration, under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. This work was completed in October 1978.

In the initial countywide study, hydrologic and hydraulic analyses for flooding sources within the unincorporated areas of Garfield County were prepared by the Soil Conservation Service (SCS) for FEMA, under Inter-Agency Agreement No. IAA-88-E-2736, Project Order No. 182. This work was completed in July 1989. In addition, the hydrologic and hydraulic analyses for Tributaries 1, 2, 3, and 4, and Tributary 3 Reach 2, in the City of Enid, were prepared by Hydrologic, Inc., for FEMA, under Contract No. EMW-89-C- 2834. This work was completed in April 1990.

The hydrologic and hydraulic analyses for the June 19, 2012 study were performed by Watershed VI Alliance, for the FEMA, under Contract No. EMT-2002-CO-0048, Task Order HSTO045. This study was completed in May 2008.

For this revision to the countywide study, the hydrologic and hydraulic analyses for Boggy Creek Tributaries 1,2, and 3, Tributary 1 to Boggy Creek Tributary 1, and West Boggy Creek were performed using elevations derived using the most detailed topographic data available for this study are the Light Detection and Ranging (LiDAR) data obtained from the communities in Oklahoma. The 1/3 Arc Second NED Digital Elevation Models (DEMs) were downloaded from U.S. Geological Survey and were used to provide coverage for the missing areas. This work was performed by RAMPP for Task Order HSFE06-12-J-0001 under FEMA IDIQ Contract HSFEHQ-09-D-0369 for Lower Cimarron Skeleton Watershed, Oklahoma and completed in March 2016.

1.3 Coordination

The initial Consultation Coordination Officer (CCO) meeting was held in May 2007 and attended by representatives of FEMA, the Oklahoma Water Resources Board (OWRB), the City of Enid, the Towns of North Enid and Lahoma, and the study contractor.

The results of the study were reviewed at the final CCO meeting held on December 2, 2008, and attended by representatives of FEMA, the study contractor and the local communities. All problems raised at that meeting have been addressed in this study.

2.0 **AREA STUDIED**

2.1 Scope of Study

This FIS report covers the geographic area of Garfield County, Oklahoma, including the incorporated communities listed in Section 1.1.

Streams studied by detailed methods are provided in Table 1. Detailed streams are those streams that were newly studied within the County. Redelineation streams are those streams previously studied and had elevations and flood boundaries adjusted to conform to the datum of the new maps and topographic data.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by FEMA and the study contractor.

The appropriate Letters of Map Revision (LOMRs) within Garfield County have been

incorporated into the revised FIRMs.

The 2008 FIS update revised the previously printed profiles for Skeleton Creek and Tributary A to Boggy Creek Tributary. For a list of the LOMR's incorporated in this update, refer to Table 2 "Garfield County LOMR Table". For detailed LOMR information visit the FEMA website https://hazards.fema.gov.

Table 1. Streams Studied by Detailed Methods

Stream	Reach Length (miles)	Study Area
Bethany Creek	2.41	From confluence with Pleasantdale Creek to just upstream of S. 42nd Street
Boggy Creek	14.43	From confluence with Skeleton Creek to approximately 0.70 miles upstream of W. Willow Road
Boggy Creek Tributary	1.87	From confluence with Boggy Creek to approximately 0.10 miles upstream of Constitution Avenue
Boggy Creek Tributary (West Branch)	0.03	From confluence with Boggy Creek Tributary to just upstream of confluence with Boggy Creek Tributary
Clear Creek	0.68	From just upstream of W. Rupe Ave to approximately 0.38 miles upstream of confluence with Sand Creek
Dinker Creek	3.05	From just upstream of S. 42nd Street to just downstream of E. Wheat Capital Rd.
Dinker Overflow Tributary	0.85	From approximately 0.24 miles upstream of S. 42nd Street to approximately 0.14 miles downstream of S. 38th Street
Green Valley Creek	1.63	From N2780 Road to approximately 0.16 miles upstream of N. Ridge Road
Lahoma Tributary	1.96	From confluence with Turkey Creek to approximately 0.76 miles upstream of the Town of Lahoma/Garfield County boundary
Levengood Creek	1.81	Approximately 0.17 miles downstream of E. Wheat Capital Road to approximately 1.19 miles upstream of 42nd Street
North Boggy Creek	4.62	From confluence with Boggy Creek to US Highway 60
North Creek	0.75	From confluence with Bethany Creek to just downstream of Rupe Drive
Old Channel Boggy Creek	2.13	From confluence with North Boggy Creek to just upstream of S. Johnson Street
Phillips University Tributary	1.32	From confluence with Boggy Creek to just upstream of E. Eucalyptus Avenue
Pleasantdale Creek	0.88	From confluence with Bethany Creek to just upstream of E. Southgate Road
Red Rock Creek	1.72	From County Road to approximately 0.22 miles upstream of N2950 Road
Sand Creek	3.25	From confluence with Clear Creek to just upstream of W. Willow Road

Table 1. Streams Studied by Detailed Methods Cont'd.

Skeleton Creek	10.35	From approximately 0.25 miles upstream of E. Southgate Road to just upstream of W. Phillips Avenue
Skeleton Creek Tributary 22	0.41	From confluence with Skeleton Creek to approximately 0.10 miles upstream of City of Enid/Garfield County boundary
Skeleton Creek Tributary 26	0.53	From confluence with Skeleton Creek to just upstream of Breckenridge Road
Skeleton Creek Tributary	1.12	From confluence with Skeleton Creek to just upstream of Breckenridge Road
Tributary 1	3.07	From confluence with Tributary 3 to just upstream of E. Willow Road
Tributary 1 to Tributary 3	0.67	From confluence with Tributary 1 to approximately 0.22 miles upstream of Atchison Topeka and Santa Fe Railroad
Tributary 2	5.17	From confluence with Tributary 3 to just upstream of Breckenridge Road
Tributary 3	6.19	From confluence with Skeleton Creek to approximately 0.75 miles upstream of E. Willow Road
Tributary 3 Reach 2	0./77	From confluence with Tributary 3 to just upstream of N. 78th Street
Tributary 3 to Tributary 3	0.46	From confluence with Tributary 3 to approximately 0.46 miles upstream of confluence with Tributary 3
Tributary 4	2.58	From confluence with Skeleton Creek to just upstream of Atchison Topeka and Santa Fe Raliroad
Boggy Creek Tributary 1	1.4	Approximately 1900 feet downstream of Richland Avenue to Approximately 1200 feet upstream of South Cleveland Street
Boggy Creek Tributary 2	1.6	At the confluence with Boggy Creek Trib 1 to approximately 3700 upstream of West Southgate Road
Boggy Creek Tributary 3	1.9	Approximately 2000 feet downstream of the Union Pacific Railroad crossing to approximately 350 feet downstream of Pride Drive
Tributary to Boggy Creek Tributary 1	0.7	Approximately 570 feet upstream of West Southgate Road
Turkey Creek	3.66	From confluence with Spring Creek to approximately 0.30 miles upstream of confluence with Turkey Creek Tributary 2

Table 1. Streams Studied by Detailed Methods Cont'd.		
Turkey Creek	2.26	From approximately 1.05 miles downstream of US Highway 60 to approximately 1.10 miles upstream of confluence with Lahoma Tributary
Unnamed Tributary of Dinker Creek	0.54	From confluence with Dinker Creek to approximately 0.70 miles upstream of S 30th Street
Unnamed Tributary of Lahoma Tributary	0.55	From confluence with Lahoma Tributary to just upstream of Oklahoma Street
Unnamed Tributary of Red Rock Creek	0.57	From confluence with Red Rock Creek to approximately 0.50 miles upstream of E. Robertson Road
Unnamed Tributary of Turkey Creek Near Fish Hatchery	3.33	From confluence with Turkey Creek to just downstream of W. Owen K Garriott Rd
Unnamed Tributary of Turkey Creek Northeast of Fish Hatchery	1.33	From confluence of Unnamed Tributary of Turkey Creek Near Fish Hatchery to just downstream of W. Owen K. Garriott Road
West Boggy Creek	1.8	From confluence with Boggy Creek to approximately 1700 feet upstream of South Garland Road

Table 2. Garfield County LOMR Table

Community	Case Number	Flooding Source(s)	Effective Date	Status
City of Enid	98-06-688P	Skeleton Creek	03/13/1998	INCORPORATED
City of Enid	99-06-540P	Boggy Creek Tributary A	03/26/1999	INCORPORATED
City of Enid	13-06-0748P	Boggy Creek; Boggy Creek Tributary 1; Skeleton Creek and Tributary A to Boggy Creek Tributary	1/4/2013	INCORPORATED
City of Enid	14-06-2061P	Old Channel Boggy Creek	4/16/2015	INCORPORATED

2.2 Community Description

Garfield County is located in north-central Oklahoma. It is bordered by the unincorporated areas of Grant County to the north, Noble County to the east, Kingfisher and Logan Counties to the south, and Major and Alfalfa Counties to the west. The 2000 population of the county was 57,813 (Reference 1). The county is mainly a rural and agricultural area, but has some small industries in its cities. The largest city in the county is Enid, which had a population of 47,045 in 2000. Enid is the county seat and home to Vance Air Force Base, which employs approximately 2,500 military and civilian personnel. Other towns in the county are much smaller, with populations of 2,000 or less.

Garfield County is served by several Federal, State and local roads. State Route 15 runs east-west through Enid, in the middle portion of the county, and is the most widely traveled. Three highways traverse the county from north to south: State Route 132 in the west, State Route 74 in the east, and US Route 81, which runs through Enid and the central portion of the county.

The climate of Garfield County is sub-humid. The average yearly precipitation in Enid is 31.23 inches. The average daily mean temperatures range from 35.4 degrees Fahrenheit (°F) in January to 83.5°F in July, with an average mean annual temperature of 60.3°F (Reference 2). The majority of the land in the county is devoted to agricultural uses, mainly wheat farming. Topography ranges from smooth to rolling lands known as the Reddish Prairies.

The major streams draining the county are Turkey Creek, Skeleton Creek, Black Bear Creek, and Red Rock Creek. Turkey Creek drains the western portion of the county, and Skeleton Creek drains the central part; both of these streams flow toward the south. Black Bear Creek and Red Rock Creek flow eastward, and drain the eastern portion of the county. Other smaller streams include Sand Creek, Otter Creek, and Wild Horse Creek.

Turkey Creek runs through the western portion of the county in a southeastern direction and empties into the Cimarron River. Although there is little new development expected in its floodplain in the near future, some of its tributaries may attract development. The tributaries of Turkey Creek near the fish hatchery, which are approximately 2 miles south and 4 miles east of Lahoma, run in a southern direction. The floodplains south of U.S. Route 60 are used for agriculture. A few homes are located in the floodplain, and little new development is expected.

Sand Creek flows toward the south, just west of Enid, and ultimately feeds into Turkey Creek. The floodplain is primarily agricultural, but substantial residential development has taken place in some areas. A portion of the most heavily developed area of Sand Creek, near the intersection of West Chestnut Avenue and North Imo Road, lies within the City of Enid. Sand Creek, because of its appeal and proximity to Enid, shows a high potential for attracting residential development within its floodplain. Sand Creek joins a smaller tributary in the southern half of Section 18, T22N, R7W, and below this confluence the stream is named Clear Creek.

Lahoma Tributary flows in a northeastern direction, just west of the Town of Lahoma, and joins Turkey Creek. Its floodplains are devoted primarily to agriculture. The Unnamed Tributary of Lahoma Tributary flows in a northern direction through a residential area of Lahoma, and empties into Lahoma Tributary just downstream of U.S. Route 60. Future development in this area is not expected.

Green Valley Creek flows toward the south through a small residential area, and then directly into Turkey Creek. Below the residential area, the floodplain is devoted to agricultural uses. There is little potential for future development in this area.

Bethany Creek is a small tributary of Skeleton Creek. Agriculture also predominates in the Bethany Creek floodplain. Although a few homes have been built along Bethany Creek and along the upper portion of one of its tributaries, Pleasant Dale Creek, there is little potential for future development. North Creek is the other tributary of Bethany Creek.

Dinker Creek and Levengood Creek are small tributaries of Skeleton Creek that have common floodplains in their lower portions. Dinker Creek flows in a southern direction for approximately 1.5 miles, and then turns east for 2 miles; it is fed by an unnamed tributary. Levengood Creek flows toward the southeast. Again, agriculture is the main type of land use in the floodplains, although there is some scattered residential

development in the study area. There is little potential for future development.

The main stem of Red Rock Creek flows southward, and its floodplains are mainly used for agricultural purposes. Future development in the study area is not expected. The Unnamed Tributary of Red Rock Creek flows northward to its confluence; its floodplains are used primarily for pastureland.

2.3 Principal Flood Problems

Major storms in the county are generally produced by heavy rainfall from frontal storms that occur in the spring and fall. Major flooding can be produced by the intense rainfall associated with localized thunderstorms. Although these storms can occur at any time of the year, they are most prevalent in the spring and fall. Flooding problems have occurred in all the streams studied by detailed methods.

Major floods occurred in Garfield County on August 16-17, 1932; May 15-16, 1957; and October 10-11, 1973. Information provided by residents indicated that the August 1932 flood produced the second highest flood stage at the USGS Turkey Creek stream gage near Drummond. The 24-hour consecutive rainfall at Enid for this storm was 10.76 inches; this exceeds the 0.2-percent-annual-chance 24-hour rainfall for the county. The 1957 floods were characterized by general heavy rainfall from mid-April through the latter part of June 1957. At the Enid weather station, from April 18 through June 25, 1957, a total of 27.83 inches of rainfall was recorded. This period of heavy rains resulted in the widespread flooding. The worst flooding occurred on May 15-16, 1957, when the third largest recorded flood stage occurred at the Turkey Creek gage near Drummond.

The October 10-11, 1973 flood was the flood of record for those areas in and around Enid, and at the Turkey Creek gage near Drummond. The 24-hour rainfall of 15.68 inches recorded near downtown Enid was the largest rainfall ever officially recorded in the state (larger unofficial amounts have been documented). Of the 15.68-inch total, 13.08 inches occurred in a 4-hour period, from 6:15-10:15 p.m. on October 10, 1973. Flooding in excess of the expected 0.2-percent-annual-chance level occurred on the tributaries near Enid, and resulted in the loss of nine lives. The Oklahoma Civil Defense estimated total flood damages at $78 million. West of Enid, the rainfall near Lahoma was approximately 6 inches. While general flooding also occurred in this area, it was not the flood of record.

The following tabulation shows peak discharges for the October 1973 flood recorded within the City of Enid (Reference 3).

Flooding Source and Location	Peak Discharge (cubic feet per second)
Skeleton Creek	
Below Willow Road	35,000
Boggy Creek	
At Lahoma Road	10,000

Surface flooding occurs along the old streambed. A storm sewer also replaces portions of the main channel of North Boggy Creek. It flows underground from Forrest Avenue to

Maine Street. In addition to these developments, portions of the channel in the downtown area are concrete-lined. Even so, North Boggy Creek storm sewers and channel improvements are inadequate, resulting in frequent local flooding.

2.4 Flood Protection Measures

No flood protection measures are known to exist in Garfield County.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that is expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40-percent (4 in 10); for any 90-year period, the risk increases to approximately 60-percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the county.

Information on the methods used to determine peak discharge-frequency relationships for the streams studied by detailed methods, compiled from the previously printed FIS narratives for the communities located within Garfield County, is shown below. The incorporated communities are listed in alphabetical order; methodologies are described for each community. For streams that flow through two or more communities, each methodology described applies only to that portion of the stream studied by detailed methods within that particular community.

The previously printed FIS for the City of Enid considered the following streams: Skeleton Creek, Skeleton Creek Tributary, Boggy Creek, Phillips University Tributary, North Boggy Creek, Old Channel Boggy Creek, West Boggy Creek, Boggy Creek Tributary Above Chestnut Avenue, and Boggy Creek Tributary Below Chestnut Avenue (West Branch) (Reference 3).

In that study, discharges were computed using equations, established by a statistical analysis, relating selected basin characteristics to flow records of streams in Oklahoma and neighboring states (Reference 4). Adjustments were made to the computed discharges to account for urbanization within the basin (Reference 5). A discharge for the 0.2-percent- annual-chance flood was not computed; instead, the historical flood profiles

surveyed in October 1973 were used as the 0.2-percent-annual-chance-flood, even though the flood was in excess of the 0.2-percent-annual-chance flood (Reference 6). Relatively small changes in water-surface elevations occur with discharge changes when dealing with floods of large recurrence intervals, such as 500 years. The statistical analysis related to the computations of the 0.2-percent-annual-chance flood has significant errors associated with it. Therefore, routing a computed 0.2-percent-annual-chance flood was considered to be less accurate than the profile of the naturally occurring flood.

Peak discharge-drainage area relationships for Boggy and Skeleton Creeks, within the City of Enid, are shown in Figure 1, "Frequency Discharge, Drainage Area Curves."

The maximum known unit discharges in the vicinity of Enid are the Sand Creek tributary near Kremlin (1,664 cfs per square mile), and Skeleton Creek at Enid (2,020 cfs per square mile).

The previously printed FIS for the Town of North Enid considered Skeleton Creek (Reference 7). In that study, peak discharges for the 10-, 2- and 1-percent-annual-chance recurrence intervals were computed using equations established by a statistical analysis relating selected basin characteristics to flow records of streams in Oklahoma and neighboring states (Reference 4). Adjustments were made to the computed discharges to account for urbanization within the basin (Reference 5). As in the City of Enid study, 0.2-percent-annual-chance peak discharges were not computed; instead the historical profiles surveyed during the October 1973 flood were used for the 0.2-percent-annual-chance flood. Elevations of the high-water marks of the October 1973 flood on Skeleton Creek within the Town of North Enid are shown in the following tabulation.

Distance above Southgate Road	Elevation (feet NGVD)
4,000	1,244,30
4,300	1,244.60
5,150	1,246.50
5,310	1,245.20
11,480	1,247.10
11,590	1,263.40
11,700	1,262.00

In the September 30, 1995 revision to the FIS, a LOMR dated April 29, 1994, was incorporated which resulted in modifications to the base (1-percent–annual-chance) flood elevations (BFEs) and Special Flood Hazard Areas (SFHAs) along Boggy Creek Tributary and Tributary A to Boggy Creek Tributary. The hydrologic analysis for Boggy Creek Tributary was based on information found in the previous FIS for Garfield County and Incorporated Communities (Reference 8). More detailed subdivision of the drainage areas upstream of Boggy Creek Tributary (West Branch) in conjunction with the discharge- drainage area curve found in the effective FIS text, determined new 1-percent-annual- chance discharges for the Boggy Creek Tributary and Tributary A to Boggy Creek Tributary.

Survey data, and other hydraulic and hydrologic data previously developed and used by the SCS in its analyses of the Upper Red Rock Creek and Turkey Creek watershed projects were used in the preparation of this countywide study, when applicable. The survey data and hydraulic data previously developed were used exclusively in the

analyses of Red Rock Creek and the Turkey Creek main stem; some refinements were made to the hydrologic data for these streams. Previously developed survey and other data were also used in the analyses of Sand Creek and the unnamed tributaries of Turkey Creek. Additional field surveys and other data were obtained as needed, and combined with the existing data to provide the desired level of accuracy.

For the June 19, 2012 revision, hydrologic conditions in the unincorporated areas of the county were determined using the Garfield County Soil Survey and data obtained from field investigations (Reference 9). Runoff curve numbers were computed from the soil cover complex data and used to determine the peak discharges for the 10-, 2-, 1- and 0.2-percent- annual-chance floods. Technical Paper No. 40, or extrapolations of its data were used to determine the 24-hour rainfalls for the study area (Reference 10). The SCS TR-20 hydrologic computer program was used to determine the frequencies-volume-peak discharge relationship at selected valley cross sections (Reference 11). The results for existing conditions compared favorably with historical data and a regionalized gage analysis published by the USGS (References 12 and 13). For Tributaries 1, 2, 3, and 4, and Tributary 3 Reach 2 in the City of Enid, the flood-frequency discharge values were determined using the U.S. Army Corps of Engineers (USACE) HEC-1 computer program (Reference 14).

Hydrologic computations for this revision and analyses for Lower Cimarron-Skeleton Watershed, Oklahoma consist of determining discharges for the 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance flood events for a total of 18 miles of detailed study streams. These discharges will support the Physical Map Revision (PMR) of Canadian, Garfield, Kingfisher, Logan and Oklahoma counties in Oklahoma. The Hydrologic Unit Code (HUC8) for Lower Cimarron-Skeleton Watershed is 11050002.

In accordance with FEMA standards and guidance, Oklahoma regression analysis and U.S. Geological Survey (USGS) gage analyses were selected for estimating the peak discharges for this study, where applicable. Rainfall-runoff modeling was only used where determined to be necessary, as described in more detail in the following sections. The regression equations used for this study can be found in the USGS Scientific Investigation Report (SIR) 2010-5137, Methods for Estimating the Magnitude and Frequency of Peak Stream Flows for Unregulated Streams in Oklahoma (Reference 28).

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods, except for the streams or portions of streams studied in the original City of Enid FIS (see Figure 1), is shown in Table 3 on the following page, Summary of Discharges.

Table 3 – Summary of Discharges

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent	2-Percent	1-Percent	0.2-percent
BETHANY CREEK					
At south line road of Section 23, T22N, R6W	2.09	942	1,373	1,612	2,179
BOGGY CREEK	*	*	*	*	*
BOGGY CREEK TRIBUTARY	*	*	*	*	*
BOGGY CREEK TRIBUTARY (WEST BRANCH)	*	*	*	*	*
BOGGY CREEK TRIBUTARY 1					
At confluence with West Boggy Creek	4.90	1,317	2,711	3,445	5,608
BOGGY CREEK TRIBUTARY 2					
Approximately 150 feet downstream of Richland Avenue	0.13	127	261	344	576
BOGGY CREEK TRIBUTARY 3					
Approximately 1,890 feet downstream of Union Pacific Railroad Crossing	2.23	1,101	1,957	2,411	3,698
CLEAR CREEK					
At confluence of Sand Creek	18.32	3,497	5,809	7,003	9,810
DINKER CREEK					
Approximately 14,150 feet above confluence with Skeleton creek	4.57	2,108	3,194	3,862	5,156
East line road of Section 4, T21N, R6W	1.27	685	1,150	1,350	1,900
DINKER OVERFLOW TRIBUTARY					
Approximately 1,300 feet downstream of west boundary of Section 4, T21N, R6W	2.34	146	282	375	599
GREEN VALLEY CREEK					
South line road of Section 16, T22N, R8W	0.44	146	213	245	308

* No data available

Table 3 – Summary of Discharges

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent	2-Percent	1-Percent	0.2-percent
LAHOMA TRIBUTARY					
At U. S. Route 60	0.64	295	460	550	745
Approximately 400 feet downstream of west boundary of Section 34, T22N, R6W	1.07	495	808	973	1,349
NORTH CREEK					
Approximately 600 feet upstream of confluence with Bethany Creek	0.49	277	450	505	721
OLD CHANNEL BOGGY CREEK	*	*	*	*	*
PHILLIPS UNIVERSITY TRIBUTARY	*	*	*	*	*
PLEASANTDALE CREEK					
Approximately 200 feet upstream of confluence with Bethany Creek	0.37	228	325	400	530
RED ROCK CREEK					
Approximately 1,950 feet upstream of east boundary of Section 4, T23N, R5W	21.32	4,621	6,465	7,702	10,761
PHILLIPS UNIVERSITY TRIBUTARY	*	*	*	*	*
PLEASANTDALE CREEK					
Approximately 200 feet upstream of confluence with Bethany Creek	0.37	228	325	400	530
RED ROCK CREEK					
Approximately 1,950 feet upstream of east boundary of Section 4, T23N, R5W	21.32	4,621	6,465	7,702	10,761

* No data available
** Historical flood profile of October 1973 used, therefore, no discharge computation was necessary

Table 3 – Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent	2-Percent	1-Percent	0.2-percent
SAND CREEK					
At confluence with Clear Creek	18.32	3,497	5,809	7,003	9,810
At U. S. Route 60 median	16.29	3,328	5,516	6,645	9,284
At North Imo Road	15.42	3,281	5,415	6,517	9,104
Approximately 1,150 feet downstream of north boundary of Section 5, T22N, R7W	13.64	3,119	5,134	6,175	8,619
SKELETON CREEK					
At 16th Street	7.00	1,920	3,970	4,880	**
At Purdue Avenue	5.60	1,630	3,360	4,120	**
SKELETON CREEK TRIBUTARY	*	*	*	*	*
TRIBUTARY 1					
At confluence with Tributary 3	1.81	731	1,325	1,553	4,731
At Chestnut Avenue	1.08	416	784	909	2,948
TRIBUTARY 2					
At confluence with Tributary 3	3,63	634	1,243	1,520	6,217
At Chestnut Avenue	3.38	613	1,212	1,490	6,125
At Willow Road	2.75	490	972	1,187	4,986
TRIBUTARY 3					
At confluence of Skeleton Creek	9.25	2,200	4,122	4,960	17,303
At confluence of Tributary 1	7.21	1,553	2,957	3,613	12,954
At confluence of Tributary 2	3.53	1,299	2,439	2,917	8,826
At Chestnut Avenue	2.52	941	1,749	2,110	6,592
At confluence of Tributary 3 Reach 2	1.19	441	838	1,004	3,157

* No data available

** Historical flood profile of October 1973 used, therefore, no discharge computation was necessary

Table 3 – Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent	2-Percent	1-Percent	0.2-percent
TRIBUTARY 3 Reach 2					
At confluence with Tributary 3	0.46	192	342	408	1,311
TRIBUTARY 4					
At confluence with Skeleton Creek	0.89	536	921	1,080	2,623
At U.S. Route 60	0.61	384	629	744	1,942
TRIBUTARY 1 to BOGGY CREEK TRIBUTARY 1					
At confluence of Boggy Creek Tributary 1	0.14	144	295	389	648
TRIBUTARY A TO BOGGY CREEK TRIBUTARY	*	*	*	*	*
TURKEY CREEK					
At U. S. Route 60	110.44	12,704	22,617	28,422	42,678
At confluence with Spring Creek near City of Lahoma	*	*	*	*	*
UNNAMED TRIBUTARY OF TURKEY CREEK NEAR FISH HATCHERY					
Approximately 4,500 feet upstream of confluence with Turkey Creek	10.08	1,953	3,136	3,706	4,954
UNNAMED TRIBUTARY OF TURKEY CREEK NORTHEAST OF FISH HATCHERY					
Approximately 3,000 feet downstream of U. S. Route 60	1.42	400	715	902	1,489
UNNAMED TRIBUTARY OF DINKER CREEK					
Approximately 850 feet above confluence with Dinker Creek	1.00	691	1,030	1,198	1,582
UNNAMED TRIBUTARY OF LAHOMA TRIBUTARY					
At U.S. Route 60	0.35	243	415	441	660

* No data available

Table 3 – Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent	2-Percent	1-Percent	0.2-percent
UNNAMED TRIBUTARY OF RED ROCK CREEK					
Approximately 628 feet upstream of south boundary of Section 9, T23N, R5W	1.55	108	165	193	292
WEST BOGGY CREEK					
Approximately 200 feet downstream of Grainbelt Railroad Crossing	2.56	866	1,342	1,542	2,075

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Information on the methods used to determine water-surface elevations for the streams studied by detailed methods, compiled from the previously printed FIS narratives for the communities located within Garfield County, is shown below. The incorporated communities and the unincorporated areas of the county are listed in alphabetical order; methodologies used to develop cross sections, water-surface elevations, starting water-surface elevations, and channel roughness factors (Manning's "n") are described for each community. For streams that flow through two or more communities, each methodology described applies only to that portion of the stream studied by detailed methods within that particular community.

The previously printed FIS for the City of Enid considered the following streams: Skeleton Creek, Skeleton Creek Tributary, Boggy Creek, Phillips University Tributary, North Boggy Creek, Old Channel Boggy Creek, West Boggy Creek, Boggy Creek Tributary Above Chestnut Avenue, and Boggy Creek Tributary Below Chestnut Avenue (West Branch) (Reference 3).

In that study, cross sections were obtained from contour maps at a scale of 1:2,400, with a contour interval of 2 feet (Reference 15). In three areas, however, cross sections were obtained from field surveys: along an approximately 2-mile portion of Skeleton Creek upstream of 30th Street, along a short portion of Skeleton Creek between 42nd Street and Chestnut Street, and along a portion of diversion channel on Boggy Creek, downstream of 30th Street.

Water-surface elevations for the 10-percent, 2-percent and 1-percent annual chance flood events were determined using the USGS step-backwater computer program (References 12 and 13). The 0.2-percent-annual-chance flood event water-surface elevations were determined using historical data supplemented by the step-backwater program (Reference 6). Starting water-surface elevations were determined using the slope/area method.

Channel roughness factors (Manning's "n") used in the hydraulic computations were assigned on the basis of field inspections and from flood measurements made in October 1973. For the streams studied by detailed methods, channel "n" values ranged from 0.025 to 0.050, and overbank "n" values ranged from 0.030 to 0.080.

In the September 30, 1995 revision, a LOMR dated April 29, 1994, was incorporated which resulted in modifications to the BFEs and SFHAs along Boggy Creek Tributary

and Tributary A to Boggy Creek Tributary. The LOMR reflected the replacement of the Chestnut Avenue Bridge; updated existing channel improvements; provided more detailed topographic information; and corrected errors in the effective hydraulic model along Boggy Creek Tributary. This LOMR also incorporated a detailed hydraulic analysis for Tributary A to Boggy Creek Tributary. These modifications revised the base flood elevations and the floodplain and floodway boundaries along Boggy Creek Tributary from approximately 700 feet downstream of Chestnut Avenue to just downstream of Willow Road. The floodplain boundaries were also revised for Tributary A to Boggy Creek Tributary from its confluence with Boggy Creek Tributary to approximately 600 feet upstream.

The hydraulic analysis for Boggy Creek Tributary and Tributary A to Boggy Creek Tributary were performed using the U.S. Department of the Army, Corps of Engineers HEC-2 step-backwater computer program (Reference 16). The hydrologic and hydraulic analyses were performed by Envirotech Services, Inc., and submitted in their report entitled "Quail Creek Hydraulic Analysis and FEMA LOMR Application for the City of Enid, Oklahoma" (Reference 17).

On seven small unnamed tributaries, approximate methods were used to determine flood depths; 1-percent-annual-chance flood depths were estimated using relationships developed from a statistical analysis of historical flood depths versus selected basin characteristics for streams in Oklahoma and neighboring states (Reference 18). The computed flood depths were then added to the streambed elevations to obtain approximate water-surface elevations.

The previously printed FIS for the Town of North Enid considered Skeleton Creek (Reference 7). In that study, cross section data were obtained from field surveys. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals upstream and downstream of bridges and culverts in order to compute the significant backwater effects of these structures.

Water-surface elevations for the 10-, 2- and 1-percent-annual-chance floods were determined using the USGS step-backwater computer program (References 12 and 13). The 0.2-percent-annual-chance water-surface elevations were determined using historical data supplemented by the step-backwater program (Reference 6). Starting water-surface elevations were determined using the slope-conveyance method.

Channel roughness factors (Manning's "n") used in the hydraulic computations were assigned on the basis of field inspections and from flood measurements made in October 1973. For the streams studied by detailed methods, channel "n" values ranged from 0.025 to 0.050, and overbank "n" values ranged from 0.030 to 0.080.

In the June 19, 2012 revision, cross sections for the backwater analyses of the streams studied by detailed methods within the unincorporated areas of Garfield County were obtained from field surveys. Bridge elevation data and structural geometry were taken from "as- built" plans or from field surveys.

Water-surface elevations of floods of the selected recurrence intervals for the streams studied by detailed methods in the unincorporated areas of Garfield County were computed using the SCS WSP-2 step-backwater computer program (Reference 19). For Tributaries 1, 2, 3, 4, and Tributary 3 Reach 2, in the City of Enid, water-surface

elevations of floods of the selected recurrence intervals were computed using the USACE HEC-2 computer program (Reference 20). Starting water-surface elevations for the tributaries were determined from known water-surface elevations.

Channel roughness factors (Manning's “n”) used in the hydraulic computations were assigned on the basis of field observations of the stream and floodplain areas. Channel "n" values for the streams in the unincorporated areas of Garfield County ranged from 0.040 to 0.070, and overbank "n" values ranged from 0.038 to 0.150. For Tributaries 1, 2, 3, and 4, and Tributary 3 Reach 2, in the City of Enid, channel "n" values ranged from 0.015 to 0.055, and the overbank "n" value was 0.070.

The hydraulic analyses for this revision were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if the hydraulic structures remain unobstructed, operate properly, and do not fail.

Hydraulic analyses were completed for Boggy Creek Tributaries 1,2, and 3, Tributary to Boggy Creek Tributary 1, and West Boggy Creek as identified in the Technical Proposal for Task Order HSFE06-12-J-0001 under FEMA IDIQ Contract HSFEHQ-09-D-0369 for Lower Cimarron Skeleton Watershed, Oklahama. Hydraulic computations and analyses consist of determining water surface elevations (WSELs) for the 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance flood events for a total of about 23.8 miles of detailed study streams. The hydraulic methods used for this analysis included steady flow analysis using HEC-RAS Version 4.1.0. and HEC-GeoRAS ARCGIS extension version 10.0. For the detailed study streams, each cross section was analyzed to ensure that the correct n value was assigned to each area of the cross section. This was done based on the USGS landuse data, topographic data, aerial imagery, field survey data, and field reconnaissance data (Reference 29). For all the studied streams, channel “n” values ranged from 0.030 to 0.050, and the overbank “n” values ranged from 0.04 to 0.12.

The accuracy of all assumed hydraulic factors, cross sections, and hydraulic structures was verified using computations that duplicated historical high-water mark profiles or previously printed data relating to the study area.

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of

1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRMs are referenced to the NAVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. Some of the data used in this revision were taken from the prior effective FIS reports and FIRMs and adjusted to NAVD88. The datum conversion factor from NGVD29 to NAVD88 in Garfield County is 0.46 feet.

For additional information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at http://ngs.noaa.gov, or contact the National Geodetic Survey (NGS) at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook (TSDN) associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301)713-3242, or visit their website at www.ngs.noaa.gov.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-change floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent- annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 1- and

0.2- percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the 1-percent-annual- chance floodplain boundaries for the streams studied by detailed methods within the City of Enid were interpolated using topographic maps at a scale of 1:2,400 with a contour interval of 2 feet (Reference 15). Delineation elsewhere was interpolated using topographic maps at a scale of 1:24,000, with a contour interval of 10 feet (Reference 21). The 0.2-percent-annual-chance floodplain boundaries were delineated using the elevations determined at various historical flooding sites; between these sights, the boundaries were delineated using the topographic maps.
Topographic maps at a scale of 1" = 200' and contour interval of 2 feet, produced by Envirotech Services, Inc. (Reference 16), were utilized to produce the new boundaries for Boggy Creek Tributary and Tributary A to Boggy Creek Tributary, as shown on the FIRM Panel. Boggy Creek Tributary (West Branch) was revised to reflect new conditions along Boggy Creek Tributary.

For the June 19, 2012 countywide update, floodplain boundaries in and around the City of Enid have been redelineated on updated topographic information where available. The data was provided in digital format by the City of Enid (Reference 23).

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1- percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM.

Approximate 1-percent-annual-chance floodplain boundaries in some portions of the study area were taken directly from the Flood Hazard Boundary Map for Garfield County (References 24 and 25).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1 percent annual chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 4, Floodway Data). In cases where the floodway and 1-percent-annual- chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation (WSEL) of the base flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2, "Floodway Schematic."

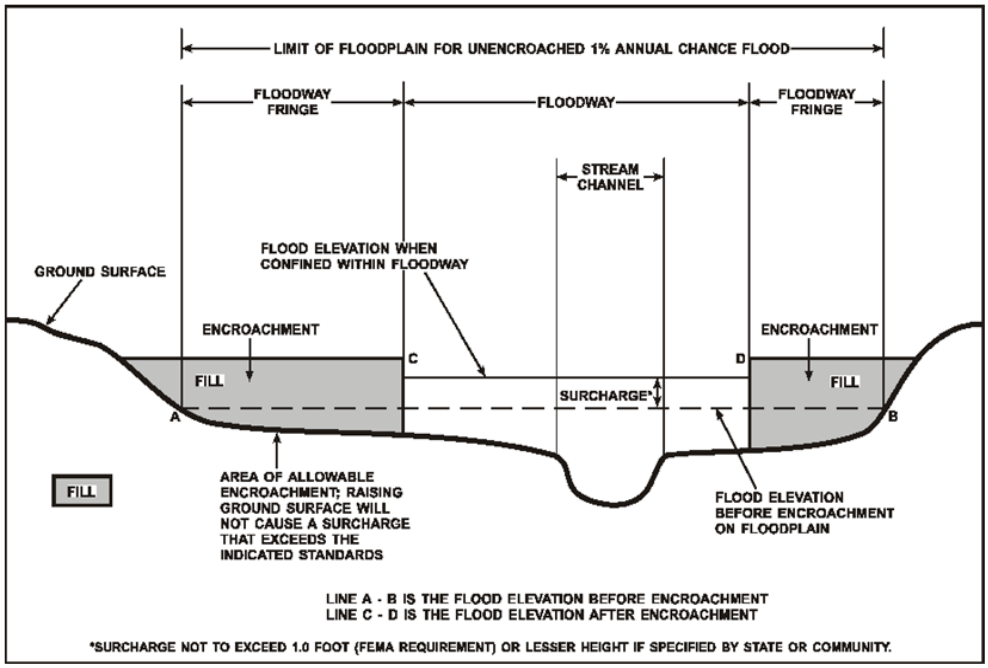

Figure 2. Floodway Schematic

Because of the scope of the previous countywide study, no floodways were computed for the streams within the unincorporated areas of Garfield County

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Boggy Creek								
A	11,470	1,235[2]	3,428	5.5	1,154.4	1,154.4	1,154.4	0.0
B	12,710	2,080[2]	3,888	4.5	1,156.6	1,156.6	1,157.5	0.9
C	14,000	1,330[2]	7,077	2.4	1,157.9	1,157.9	1,158.9	1.0
D	14,750	140	1,413	12.3	1,159.2	1,159.2	1,159.3	0.1
E	15,100	190	1,970	8.8	1,162.9	1,162.9	1,162.9	0.0
F	15,900	195	2,420	7.2	1,165.4	1,165.4	1,165.6	0.2
G	17,610	1,300	7,669	2.3	1,166.7	1,166.7	1,167.6	0.9
H	18,630	1,200	5,403	3.2	1,167.3	1,167.3	1,168.1	0.8
I	19,290	1,280	6,515	2.7	1,168.2	1,168.2	1,168.6	0.4
J	20,600	1,341[2]	3,009	5.8	1,170.1	1,170.1	1,170.1	0.0
K	21,440	194	1,411	12.3	1,172.8	1,172.8	1,173.0	0.2
L	21,860	514	1,524	11.4	1,175.1	1,175.1	1,175.1	0.0
M	22,210	1,070	5,201	3.3	1,180.0	1,180.0	1,180.0	0.0
N	23,450	460	1,879	9.2	1,180.5	1,180.5	1,180.5	0.0
O	25,250	225	2,143	8.1	1,183.0	1,183.0	1,183.8	0.8
P	26,650	210	1,938	8.9	1,186.0	1,186.0	1,186.5	0.5
Q	27,430	220	1,801	9.6	1,188.2	1,188.2	1,189.2	1.0
R	29,700	405	3,652	4.6	1,194.5	1,194.5	1,195.4	0.9
S	30,820	300	2,482	6.7	1,196.7	1,196.7	1,197.3	0.6
T	31,240	410	2,634	6.3	1,197.8	1,197.8	1,198.5	0.7

[1] Feet above confluence with Skeleton Creek.
[2] Includes both channels of a split floodway.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Boggy Creek (Continued)								
U	31,580	1,175	6,083	2.8	1,199.8	1,199.8	1,199.9	0.1
V	33,180	319	2,341	7.1	1,201.2	1,201.2	1,201.9	0.7
W	34,020	225	2,344	7.1	1,203.0	1,203.0	1,203.7	0.7
X	35,230	282	1,980	8.4	1,205.5	1,205.5	1,206.1	0.6
Y	35,660	940	6,536	2.6	1,206.6	1,206.6	1,207.5	0.9
Z	35,820	1,035	6,815	2.5	1,207.0	1,207.0	1,207.7	0.7
AA	36,371	140	1,770	9.4	1,207.9	1,207.9	1,207.9	0.0
AB	37,170	180	1,682	7.4	1,209.0	1,209.0	1,209.7	0.7
AC	38,520	165	1,643	7.6	1,211.6	1,211.6	1,212.3	0.7
AD	39,660	338	2,987	4.2	1,213.2	1,213.2	1,214.2	1.0
AE	41,230	300	2,065	6.1	1,214.8	1,214.8	1,215.5	0.7
AF	41,950	618	3,099	4.0	1,216.6	1,216.6	1,216.9	0.3
AG	42,640	170	1,742	7.2	1,217.5	1,217.5	1,217.5	0.0
AH	43,640	115	1,045	12.0	1,218.5	1,218.5	1,218.9	0.4
AI	44,520	230	1,879	6.7	1,222.6	1,222.6	1,223.4	0.8
AJ	45,180	140	11,364	9.2	1,224.1	1,224.1	1,224.4	0.3
AK	45,870	185	1,882	6.6	1,227.1	1,227.1	1,228.0	0.9
AL	46,870	110	1,058	11.8	1,229.0	1,229.0	1,229.6	0.6
AM	47,780	190	1,959	6.4	1,232.8	1,232.8	1,233.8	1.0

[1] Feet above confluence with Skeleton Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Boggy Creek (Continued)								
AN	48,380	250	1,735	7.2	1,233.9	1,233.9	1,234.8	0.9
AO	49,060	400	3,391	3.7	1,239.8	1,239.8	1,240.3	0.5
AP	49,940	260	1,881	6.7	1,239.9	1,239.9	1,240.4	0.5
AQ	50,540	200	1,567	8.0	1,240.6	1,240.6	1,240.6	0.0
AR-BJ[2]								
BK	63,100	94	784	7.0	1,265.7	1,265.7	1,265.7	0.0
BL	63,475	95	623	8.8	1,266.1	1,266.1	1,266.1	0.0
BM	63,600	109	726	7.5	1,266.9	1,266.9	1,266.9	0.0
BN	63,930	80	677	8.1	1,267.4	1,267.4	1,267.4	0.0
BO	64,575	118	978	5.6	1,268.7	1,268.7	1,268.8	0.1
BP	64,975	128	788	6.9	1,269.1	1,269.1	1,269.2	0.1
BQ	66,025	115	758	7.2	1,271.0	1,271.0	1,271.0	0.0
BR	67,250	450	1,908	2.9	1,276.3	1,276.3	1,276.5	0.2
BS	67,500	161	1,212	2.0	1,276.4	1,276.4	1,276.7	0.3
BT	68,080	200	1,089	2.2	1,279.1	1,279.1	1,279.6	0.5
BU	68,855	172	943	2.6	1,280.4	1,280.4	1,281.1	0.7
BV	69,640	82	489	5.0	1,283.3	1,283.3	1,284.1	0.8
BW	70,430	120	656	3.7	1,285.3	1,285.3	1,286.1	0.8
BX	71,165	165	509	4.8	1,286.3	1,286.3	1,287.0	0.7
BY	71,950	60	302	8.1	1,289.8	1,289.8	1,290.2	0.4
BZ	72,620	60	374	6.5	1,293.1	1,293.1	1,293.5	0.4
CA	73,100	60	281	8.7	1,294.2	1,294.2	1,294.7	0.5
CB	73,530	77	390	6.2	1,296.1	1,296.1	1,296.9	0.8

[1] Feet above confluence with Skeleton Creek

[2] No floodway information available

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Boggy Creek (Continued)								
CC	74,080	145	792	3.1	1,297.1	1,297.1	1,298.1	1.0
CD	74,400	67	304	8.0	1,297.5	1,297.5	1,298.3	0.8
CE	74,900	63	384	6.4	1,300.1	1,300.1	1,300.9	0.8
CF	75,750	135	666	3.7	1,301.8	1,301.8	1,302.8	1.0
CG	76,300	69	364	6.7	1,302.9	1,302.9	1,303.8	0.9
CH	76,925	70	389	6.3	1,305.3	1,305.3	1,306.1	0.8
CI	77,575	85	502	4.9	1,306.8	1,306.8	1,307.8	1.0

[1] Feet above confluence with Skeleton Creek.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Boggy Creek Tributary								
A	440	160	933	2.3	1,276.9	1,276.9	1,277.7	0.8
B	930	105	399	5.4	1,277.2	1,277.2	1,277.9	0.7
C	1,380	55	233	9.3	1,279.6	1,279.6	1,279.7	0.1
D	1,880	158	496	4.4	1,281.7	1,281.7	1,282.6	0.9
E	3,160	51	407	5.3	1,285.4	1,285.4	1,285.7	0.3
F	3,972	151	588	3.7	1,287.1	1,287.1	1,287.7	0.6
G	4,849	55	292	7.4	1,289.9	1,289.9	1,290.7	0.8
H	5,089	81	493	4.4	1,291.3	1,291.3	1,291.8	0.5
I	6,160	46	295	7.4	1,294.6	1,294.6	1,295.3	0.7
J	6,518	108	505	4.3	1,295.9	1,295.9	1,296.7	0.8
K	7,071	161	629	2.1	1,297.0	1,297.0	1,297.8	0.8
L	7,474	70	296	4.5	1,298.5	1,298.5	1,298.7	0.2
M	8,051	62	284	4.7	1,300.0	1,300.0	1,300.1	0.1
N	8,759	58	235	5.7	1,302.2	1,302.2	1,302.2	0.0
O	9,650	56	147	3.3	1,304.9	1,304.9	1,304.9	0.0

[1] Feet above confluence with Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

BOGGY CREEK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
North Boggy Creek								
A	170	84	689	11.1	1,208.3	1,208.3	1,208.3	0.0
B	580	179	1,509	5.1	1,210.9	1,210.9	1,210.9	0.0
C	1,240	90	1,022	7.5	1,211.8	1,211.8	1,211.8	0.0
D	1,820	207	2,070	3.7	1,212.9	1,212.9	1,213.2	0.3
E	2,840	110	846	9.0	1,213.4	1,213.4	1,213.7	0.3
F	3,110	481	3,233	2.4	1,219.4	1,219.4	1,219.6	0.2
G	3,290	205	2,295	3.3	1,219.5	1,219.5	1,219.7	0.2
H	3,780	240	1,870	4.1	1,219.6	1,219.6	1,219.8	0.2
I	3,980	432	2,344	3.3	1,219.6	1,219.6	1,220.0	0.4
J	4,430	260	1,047	7.3	1,220.0	1,220.0	1,220.4	0.4
K	4,880	170	1,097	7.0	1,221.6	1,221.6	1,222.1	0.5
L	5,090	160	939	8.1	1,221.9	1,221.9	1,222.8	0.9
M	5,620	234	1,260	4.6	1,225.7	1,225.7	1,226.3	0.6
N	6,490	330	1,438	4.1	1,227.8	1,227.8	1,228.4	0.6
O	6,815	190	1,340	4.4	1,228.2	1,228.2	1,228.7	0.5
P	6,885	417	3,696	1.6	1,233.5	1,233.5	1,233.6	0.1
Q	7,360	245	1,284	4.6	1,233.6	1,233.6	1,233.7	0.1
R	7,620	210	862	6.8	1,233.7	1,233.7	1,234.0	0.3
S	7,750	445	1,554	3.8	1,234.3	1,234.3	1,234.8	0.5

[1] Feet above confluence with Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

NORTH BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
North Boggy Creek (Continued)								
T	7,880	290	2,003	2.9	1,234.4	1,234.4	1,235.0	0.6
U	8,210	170	969	6.0	1,234.5	1,234.5	1,235.0	0.5
V	8,495	235	1,194	4.9	1,235.0	1,235.0	1,235.6	0.6
W	8,780	235	1,195	4.9	1,235.5	1,235.5	1,236.0	0.5
X	9,100	240	1,388	4.2	1,236.5	1,236.5	1,236.9	0.4
Y	9,600	178	1,111	5.3	1,237.7	1,237.7	1,238.1	0.4
Z	10,140	183	1,138	5.1	1,239.0	1,239.0	1,239.3	0.3
AA	10,570	411	1,136	5.2	1,240.0	1,240.0	1,240.1	0.1
AB	10,750	270	1,040	5.6	1,240.5	1,240.5	1,240.6	0.1
AC	11,500	135	1,003	5.8	1,242.6	1,242.6	1,242.8	0.2
AD	11,850	209	1,159	5.1	1,243.0	1,243.0	1,243.7	0.7
AE	12,340	277	1,221	4.8	1,243.9	1,243.9	1,244.6	0.7
AF	13,020	160	1,000	5.6	1,245.5	1,245.5	1,246.0	0.5
AG	13,750	123	790	7.4	1,246.8	1,246.8	1,247.5	0.7
AH	14,570	118	868	6.7	1,248.9	1,248.9	1,249.9	1.0
Al	15,110	93	693	8.4	1,250.5	1,250.5	1,251.5	1.0
AJ	15,800	375	1,747	3.4	1,252.5	1,252.5	1,253.5	1.0
AK	16,200	257	895	6.5	1,253.4	1,253.4	1,253.9	0.5
AL	16,520	387	1,064	5.5	1,255.2	1,255.2	1,255.2	0.0

[1] Feet above confluence with Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

NORTH BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
North Boggy Creek (Continued)								
AM	17,110	215	956	6.1	1,256.6	1,256.6	1,256.9	0.3
AN	17,900	220	1,358	2.3	1,257.5	1,257.5	1,258.1	0.6
AO	18,500	608	1,363	2.3	1,257.6	1,257.6	1,258.2	0.6
AP	18,900	95	439	7.2	1,257.9	1,257.9	1,258.5	0.6
AQ	19,290	318	494	6.4	1,259.5	1,259.5	1,259.6	0.1
AR	19,390	133	358	8.8	1,259.7	1,259.7	1,260.1	0.4
AS	19,950	375	1,638	1.9	1,261.8	1,261.8	1,262.5	0.7
AT	20,830	121	561	5.6	1,262.3	1,262.3	1,263.0	0.7
AU	21,400	225	1,084	1.8	1,262.8	1,262.8	1,263.8	1.0
AV	22,160	95	505	3.9	1,263.3	1,263.3	1,264.3	1.0
AW	22,550	117	705	2.8	1,265.8	1,265.8	1,266.0	0.2
AX	23,075	155	715	2.7	1,266.4	1,266.4	1,266.6	0.2
AY	23,520	156	688	2.8	1,266.9	1,266.9	1,267.3	0.4
AZ	24,170	113	463	4.2	1,267.6	1,267.6	1,268.2	0.6
BA	24,900	141	608	3.2	1,268.4	1,268.4	1,269.3	0.9

[1] Feet above confluence with Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

NORTH BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Old Channel Boggy Creek								
A	970	110	366	4.4	1,224.3	1,224.3	1,225.1	0.8
B	1,500	108	362	4.4	1,225.6	1,225.6	1,225.7	0.1
C	1,960	150	299	5.4	1,226.0	1,226.0	1,226.4	0.4
D	2,320	75	212	7.6	1,229.2	1,229.2	1,229.3	0.1
E	2,415	140	193	8.3	1,231.1	1,231.1	1,231.2	0.1
F	2,860	135	614	2.6	1,232.1	1,232.1	1,233.1	1.0
G	3,400	300	670	2.4	1,232.7	1,232.7	1,233.7	1.0
H	4,130	110	254	6.3	1,236.5	1,236.5	1,237.0	0.5
I	4,730	180	942	1.7	1,237.2	1,237.2	1,238.1	0.9
J	5,310	180	725	2.2	1,237.4	1,237.4	1,238.3	0.9
K	6,000	75	190	8.4	1,238.4	1,238.4	1,238.9	0.5
L	6,740	119	236	6.8	1,241.5	1,241.5	1,242.1	0.6
M	7,433	105	294	5.4	1,241.9	1,241.9	1,242.8	0.9
N	7,900	94	280	3.2	1,242.3	1,242.3	1,243.2	0.9
O	7,970	65	422	2.1	1,242.4	1,242.4	1,243.4	1.0
P	8,550	34	221	4.1	1,242.8	1,242.8	1,243.7	0.9
Q	9,040	42	263	3.4	1,243.7	1,243.7	1,244.6	0.9
R	9,480	80	332	2.7	1,244.2	1,244.2	1,245.1	0.9
S	9,530	31	173	5.2	1,244.2	1,244.2	1,245.1	0.9

[1] Feet above confluence with North Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

OLD CHANNEL BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Old Channel Boggy Creek (Continued)								
T	10,750	75	345	2.6	1,246.0	1,246.0	1,246.7	0.7
U	11,450	23	118	7.7	1,246.5	1,246.5	1,247.3	0.8
V	11,740	20	92	9.8	1,247.5	1,247.5	1,248.4	0.9

[1] Feet above confluence with North Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

OLD CHANNEL BOGGY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Phillips University Tributary								
A	230	191	1,689	1.5	1,180.7	1,180.7	1,180.7	0.0
B	450	205	1,842	1.3	1,180.7	1,180.7	1,180.7	0.0
C	850	150	1,157	2.1	1,180.7	1,180.7	1,180.7	0.0
D	1,380	426	3,207	0.8	1,180.8	1,180.8	1,180.9	0.1
E	1,590	428	2,102	1.2	1,190.9	1,190.9	1,191.1	0.2
F	1,800	270	1,407	1.8	1,190.9	1,190.9	1,191.1	0.2
G	2,240	95	575	4.3	1,190.9	1,190.9	1,191.1	0.2
H	2,775	69	314	7.9	1,193.0	1,193.0	1,194.0	1.0
I	3,340	162	547	4.5	1,205.7	1,205.7	1,205.7	0.0
J	3,820	80	557	4.4	1,206.0	1,206.0	1,206.0	0.0
K	4,220	58	455	5.4	1,207.2	1,207.2	1,207.4	0.2
L	4,375	75	379	6.5	1,207.7	1,207.7	1,208.0	0.3
M	4,475	107	566	4.4	1,207.9	1,207.9	1,208.7	0.8
N	4,820	45	181	7.9	1,208.4	1,208.4	1,209.1	0.7
O	5,300	81	189	7.6	1,211.8	1,211.8	1,211.8	0.0
P	5,635	40	186	7.7	1,214.1	1,214.1	1,215.1	1.0
Q	6,320	30	208	6.9	1,223.9	1,223.9	1,224.4	0.5
R	6,660	62	262	5.5	1,224.6	1,224.6	1,225.6	1.0
S	6,880	53	171	6.4	1,226.2	1,226.2	1,226.5	0.3

[1] Feet above confluence with Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

PHILLIPS UNIVERSITY TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Skeleton Creek								
A	17,520	1,415[2]	1,726	5.3	1,153.1	1,153.1	1,153.1	0.0
B	18,360	386	2,131	4.3	1,155.2	1,155.2	1,155.4	0.2
C	18,940	273	1,691	5.4	1,156.4	1,156.4	1,156.9	0.5
D	19,505	243	1,532	5.9	1,157.6	1,157.6	1,158.3	0.7
E	19,970	688	3,852	2.4	1,160.7	1,160.7	1,161.1	0.4
F	20,320	619	3,906	2.3	1,161.1	1,161.1	1,161.5	0.4
G	21,050	260	1,577	5.8	1,161.5	1,161.5	1,161.8	0.3
H	22,210	648	3,924	2.3	1,162.4	1,162.4	1,163.4	1.0
I	23,040	276	1,644	5.5	1,163.3	1,163.3	1,164.2	0.9
J	23,290	390	3,123	2.9	1,164.5	1,164.5	1,165.3	0.8
K	23,380	450	2,082	4.4	1,164.5	1,164.5	1,165.4	0.9
L	23,680	310	1,732	5.3	1,165.5	1,165.5	1,165.9	0.4
M	25,165	239	1,198	7.6	1,169.8	1,169.8	1,170.6	0.8
N	25,965	358	1,756	5.2	1,172.9	1,172.9	1,173.8	0.9
O	26,730	203	1,287	7.1	1,175.3	1,175.3	1,175.7	0.4
P	27,235	514	2,657	3.4	1,177.5	1,177.5	1,177.8	0.3
Q	27,805	266	1,659	5.1	1,178.2	1,178.2	1,178.5	0.3
R	28,325	283	1,434	5.9	1,179.1	1,179.1	1,179.5	0.4
S	29,085	203	1,102	7.7	1,181.3	1,181.3	1,181.5	0.2
T	29,850	624	4,370	1.9	1,187.8	1,187.8	1,187.8	0.0

[1] Feet above Southgate Road.
[2] Includes both channels of a split floodway.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

SKELETON CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Skeleton Creek (Continued)								
U	30,360	325	2,966	2.9	1,187.9	1,187.9	1,187.9	0.0
V	30,985	223	1,852	4.6	1,188.0	1,188.0	1,188.1	0.1
W	31,395	230	1,685	5.1	1,188.4	1,188.4	1,188.7	0.3
X	32,105	192	1,376	6.1	1,189.5	1,189.5	1,190.3	0.8
Y	32,435	661	5,644	1.5	1,195.0	1,195.0	1,195.2	0.2
Z	32,705	322	2,669	2.7	1,195.0	1,195.0	1,195.2	0.2
AA	33,325	270	1,708	4.2	1,195.2	1,195.2	1,195.4	0.2
AB	34,245	190	1,204	6.0	1,196.1	1,196.1	1,196.4	0.3
AC	34,985	370	1,965	1.6	1,196.6	1,196.6	1,197.6	1.0
AD	35,615	1,260	9,153	0.8	1,203.6	1,203.6	1,203.6	0.0
AE	36,415	450	2,866	2.5	1,203.7	1,203.7	1,203.7	0.0
AF	37,345	180	830	5.9	1,204.3	1,204.3	1,204.3	0.0
AG	37,715	350	4,647	1.1	1,215.1	1,215.1	1,215.1	0.0
AH	38,265	315	2,978	1.6	1,215.1	1,215.1	1,215.1	0.0
AI	39,105	180	901	5.4	1,215.2	1,215.2	1,215.2	0.0
AJ	39,815	150	552	8.8	1,215.6	1,215.6	1,216.6	1.0
AK	40,715	220	623	7.8	1,223.0	1,223.0	1,223.0	0.0
AL	42,045	200	983	5.0	1,229.0	1,229.0	1,230.0	1.0
AM	43,485	350	1,348	3.6	1,233.8	1,233.8	1,234.3	0.5

[1] Feet above Southgate Road.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Skeleton Creek (Continued)								
AN	43,995	224	1,485	3.3	1,234.5	1,234.5	1,235.4	0.9
AO	45,165	249	1,343	3.6	1,235.4	1,235.4	1,236.2	0.8
AP	45,435	95	664	7.4	1,235.8	1,235.8	1,236.4	0.6
AQ	45,915	90	595	6.9	1,237.4	1,237.4	1,238.0	0.6
AR	46,010	472	2,776	1.5	1,244.4	1,244.4	1,244.4	0.0
AS	47,105	110	941	4.4	1,244.7	1,244.7	1,244.7	0.0
AT	47,845	255	1,902	2.2	1,245.7	1,245.7	1,246.2	0.5
AU	48,505	138	873	4.7	1,247.3	1,247.3	1,247.8	0.5
AV	49,725	209	1,019	7.2	1,250.8	1,250.8	1,251.8	1.0
AW	51,450	173	778	6.3	1,254.6	1,254.6	1,255.0	0.4
AX	51,650	268	1,088	3.8	1,256.1	1,256.1	1,256.1	0.0
AY	51,820	156	845	4.9	1,256.5	1,256.5	1,256.5	0.0
AZ	52,920	115	744	4.2	1,258.7	1,258.7	1,259.6	0.9
BA	53,120	408	1,800	1.7	1,259.2	1,259.2	1,260.2	1.0
BB	53,390	394	1,265	2.5	1,262.2	1,262.2	1,262.4	0.2
BC	53,280	150	682	4.6	1,262.3	1,262.3	1,262.3	0.0
BD	54,000	280	757	4.1	1,262.6	1,262.6	1,262.8	0.2
BE	54,480	251	762	4.1	1,264.3	1,264.3	1,264.5	0.2
BF	54,680	59	504	6.2	1,264.3	1,264.3	1,264.5	0.2

[1] Feet above Southgate Road.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

SKELETON CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Skeleton Creek (Continued)								
BG	55,780	73	483	6.4	1,267.2	1,267.2	1,267.9	0.7
BH	56,510	105	748	6.4	1,270.2	1,270.2	1,271.2	1.0
BI	56,960	85	598	5.2	1,271.2	1,271.2	1,272.1	0.9
BJ	57,180	77	563	5.5	1,271.7	1,271.7	1,272.6	0.9

[1] Feet above Southgate Road.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

SKELETON CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Skeleton Creek Tributary								
A	500	121	819	2.7	1,195.1	1,195.1	1,195.3	0.2
B	1,220	280	914	2.4	1,195.4	1,195.4	1,195.6	0.2
C	1,750	225	397	5.6	1,196.2	1,196.2	1,196.3	0.1
D	2,200	391	581	3.8	1,199.2	1,199.2	1,199.2	0.0
E	3,900	113	406	5.4	1,204.8	1,204.8	1,205.8	1.0
F	5,050	125	405	5.5	1,208.9	1,208.9	1,209.8	0.9
G	6,200	184	912	2.4	1,212.5	1,212.5	1,213.4	0.9

[1] Feet above confluence with Skeleton Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

SKELETON CREEK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
Tributary A to Boggy Creek Tributary								
A	150	41	142	6.6	1,304.9	1,304.9	1,305.3	0.4
B	600	34	97	9.7	1,306.9	1,306.9	1,306.9	0.0

[1] Feet above confluence with Boggy Creek Tributary

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY A TO BOGGY CREEK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
West Boggy Creek								
A	450	91	409	6.4	1,254.2	1,254.2	1,254.2	0.0
B	760	58	258	10.1	1,255.1	1,255.1	1,255.1	0.0
C	870	68	240	10.9	1,255.9	1,255.9	1,255.9	0.0
D	1,580	180	678	3.9	1,259.5	1,259.5	1,259.9	0.4
E	2,260	90	480	5.3	1,260.1	1,260.1	1,260.7	0.6
F	3,010	67	353	7.4	1,261.3	1,261.3	1,262.2	0.9
C	3,680	85	441	5.9	1,263.2	1,263.2	1,264.2	1.0
H	4,810	149	645	3.6	1,265.1	1,265.1	1,266.0	0.9
I	5,250	100	436	5.4	1,265.7	1,265.7	1,266.4	0.7
J	6,150	76	410	5.7	1,267.5	1,267.5	1,268.1	0.6

[1] Feet above confluence with Boggy Creek.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODWAY DATA

WEST BOGGY CREEK

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analysis. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile (sq. mi.), and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP (FIRM)

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

The countywide FIRM presents flooding information for the entire geographic area of Garfield County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 5, “Community Map History.”

7.0 OTHER STUDIES

Because it is based on more up-to-date and detailed analyses, this study supersedes the previously printed FISs for the Cities of Enid and Garber, and the Towns of North Enid and Covington (References 8, 26, 7, and 27, respectively).

This FIS report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA Region VI, Federal Insurance and Mitigation Division, 800 North Loop 288, Denton, Texas 76209.

COMMUNIT NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE	FIRM EFECTIVE DATE	FIRM REVISONS DATE
Breckenridge, Town of	September 27, 1991	None	September 27, 1991	
Carrier, Town of*				
Covington, Town of	April 25, 1975	None	May 1, 1985	September 27, 1991
Douglas, Town of*				
Drummond, Town of*				
Enid, City of	February 22, 1974	None	March 15, 1979	September 27, 1991
Fairmont, Town of*	September 27, 1991	None	September 27, 1991	
Garber, City of	April 25, 1974	None	August 5, 1985	September 27, 1991
Hillsdale, Town of*				
Hunter, Town of*				
Kremlin, Town of	April 9, 1976	None	September 27, 1991	
Lahmoa, Town of	December 3, 1976	None	September 27, 1991	
North Enid, Town of	January 24, 1975	November 14, 1975	April 1, 1981	September 27, 1991
Waukomis, Town of	February 4, 1977	None	September 27, 1991	
Garfield County Unincorporated Areas	September 27, 1991	None	September 27, 1991	
*No Special Flood Hazard Areas				

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

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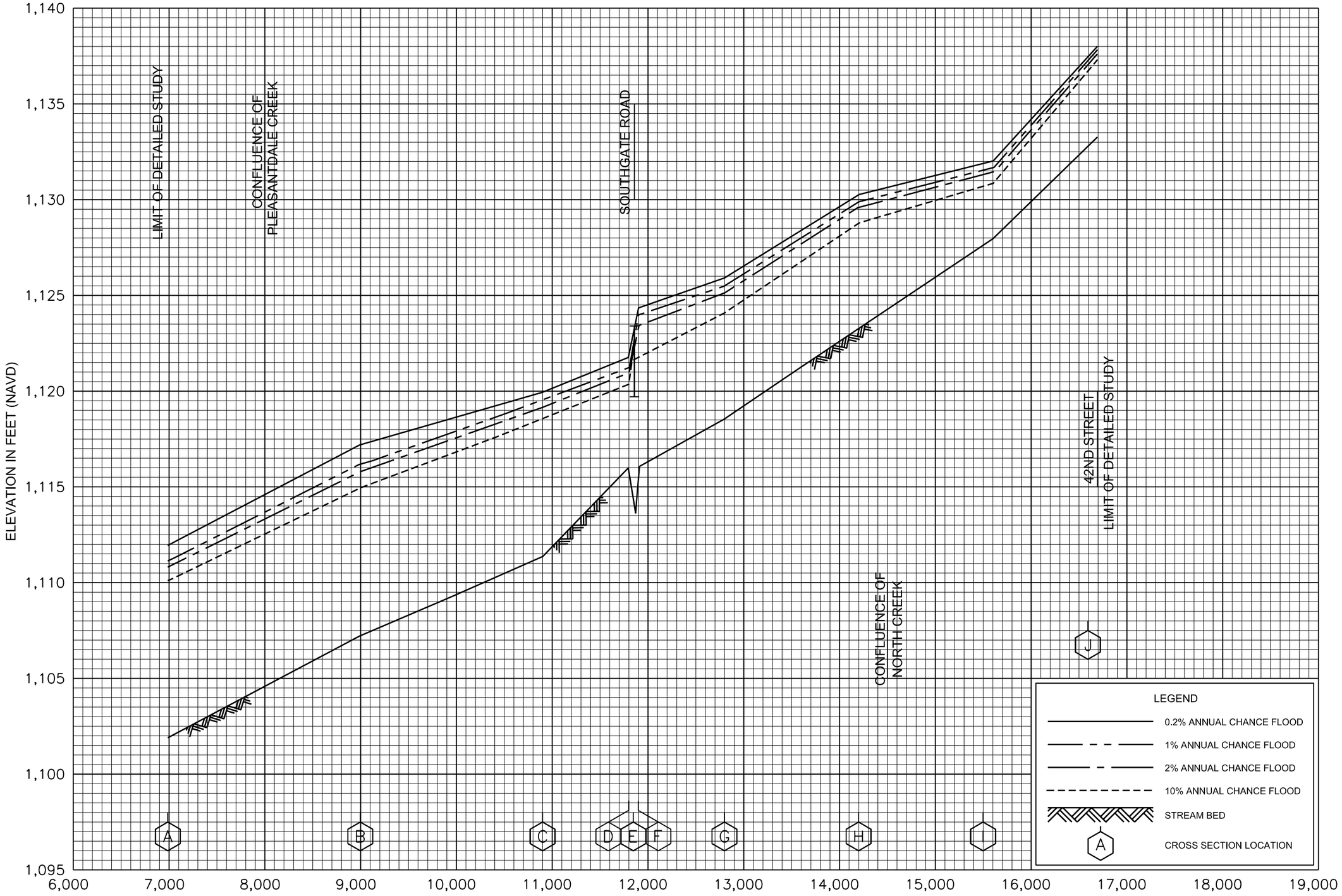


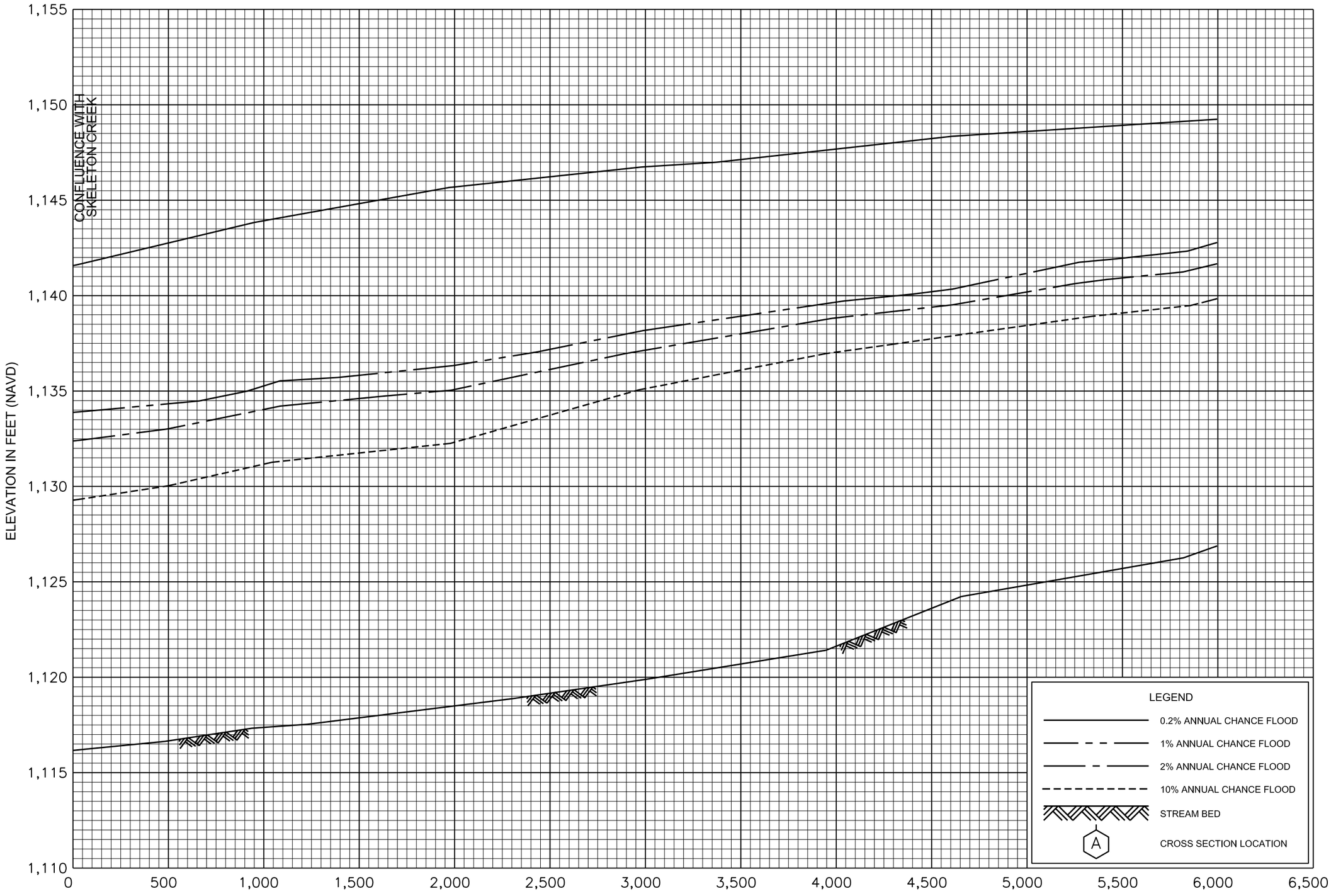
FLOOD PROFILES

BETHANY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

01P



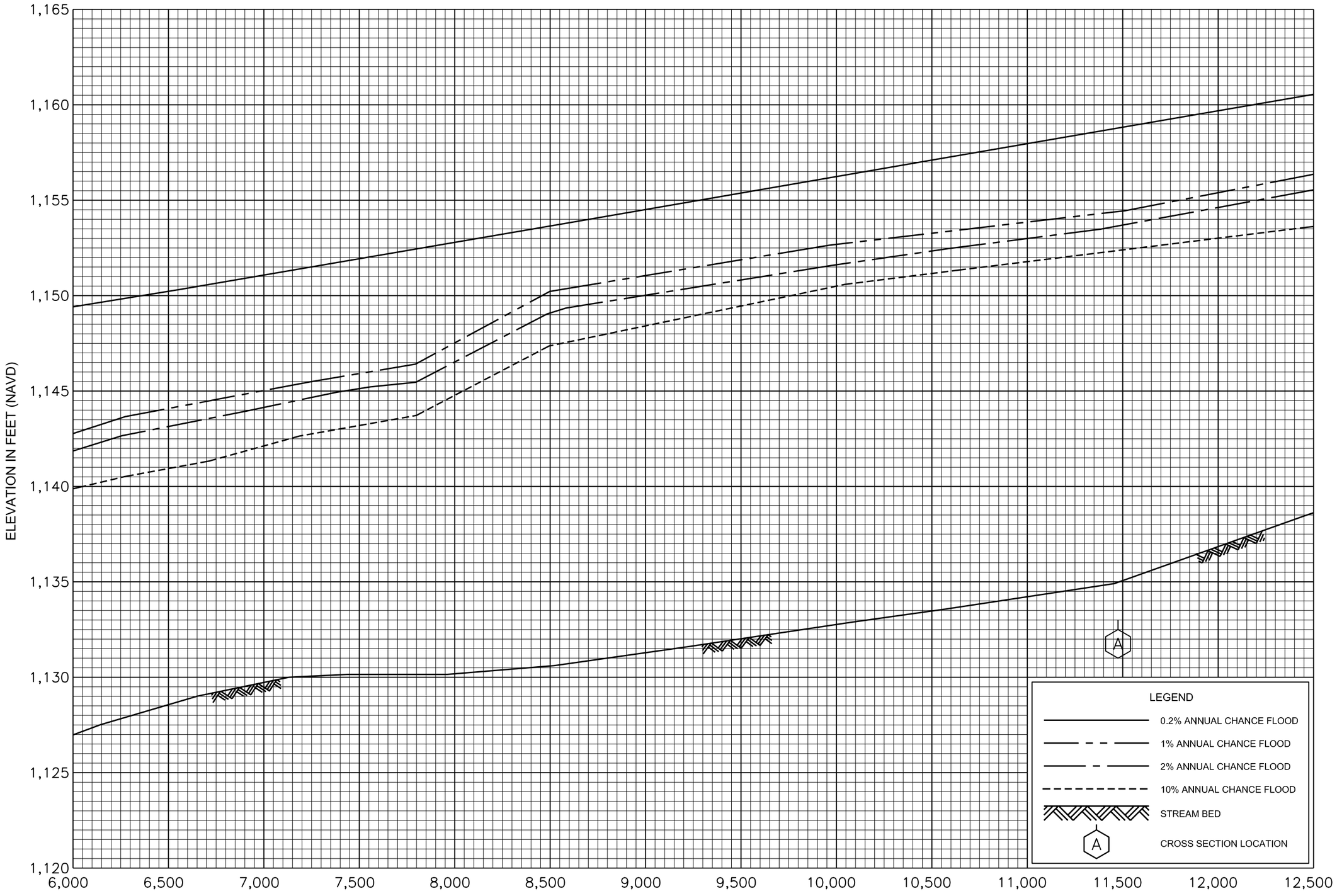
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

02P



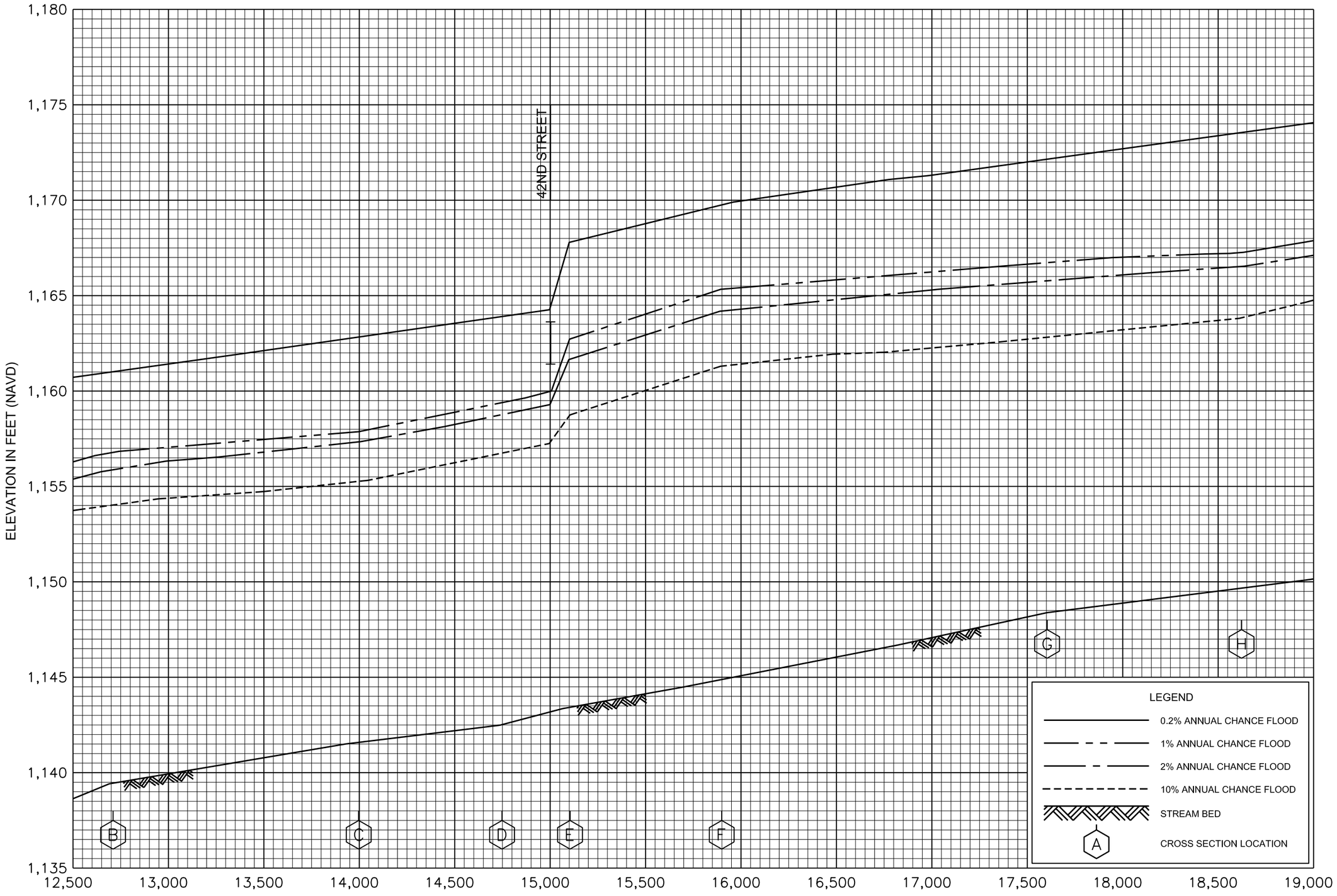
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

03P



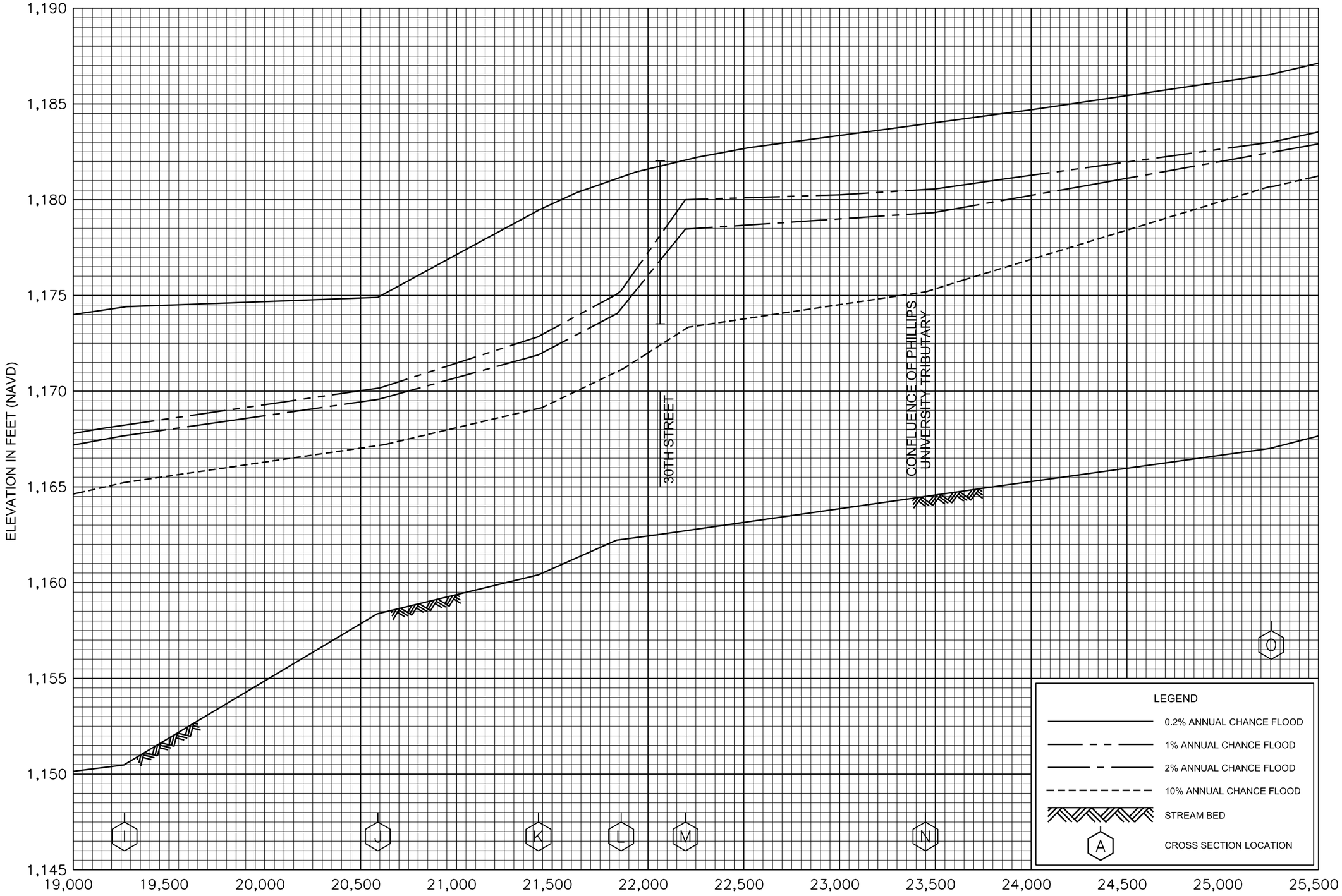
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

04P



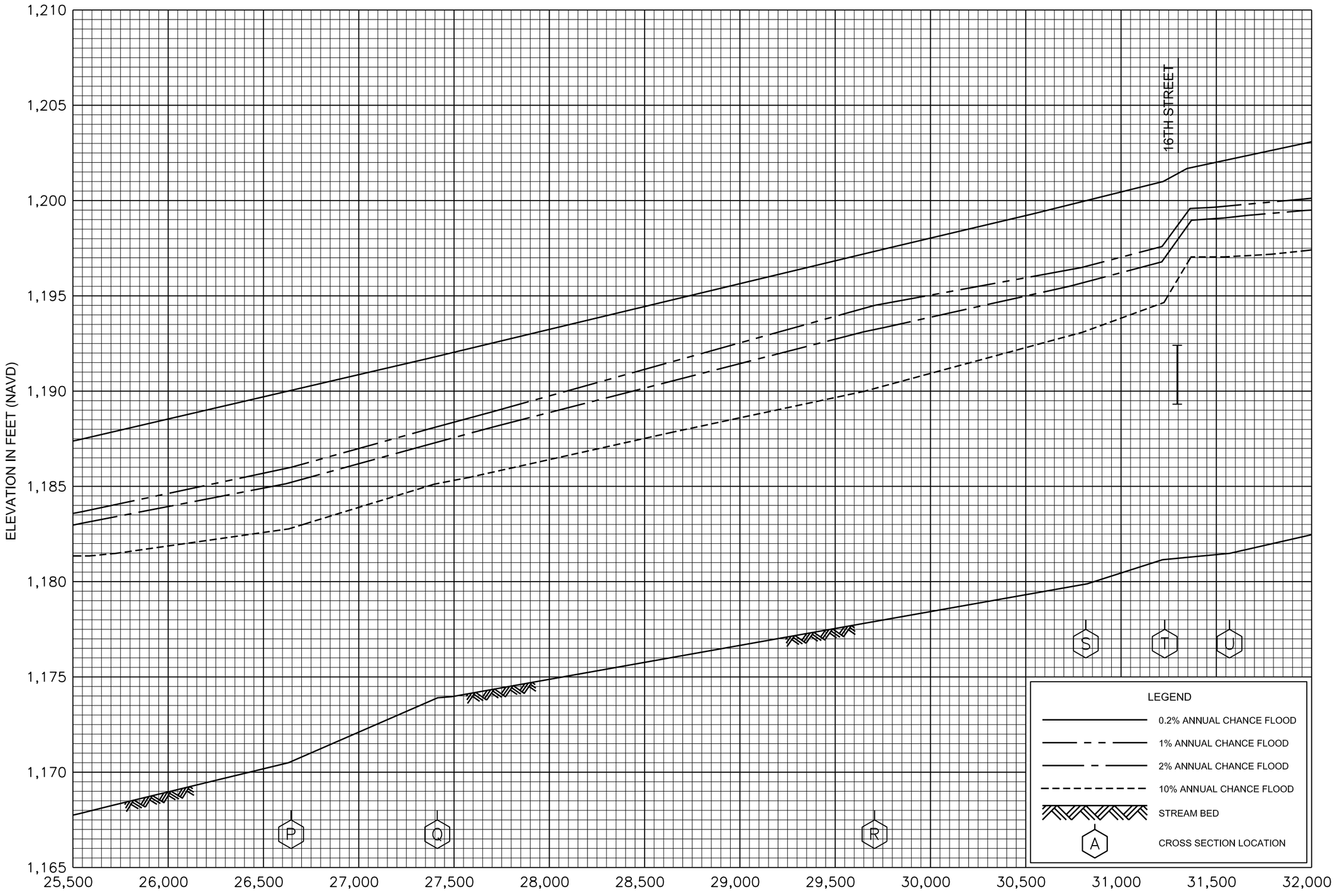
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

05P



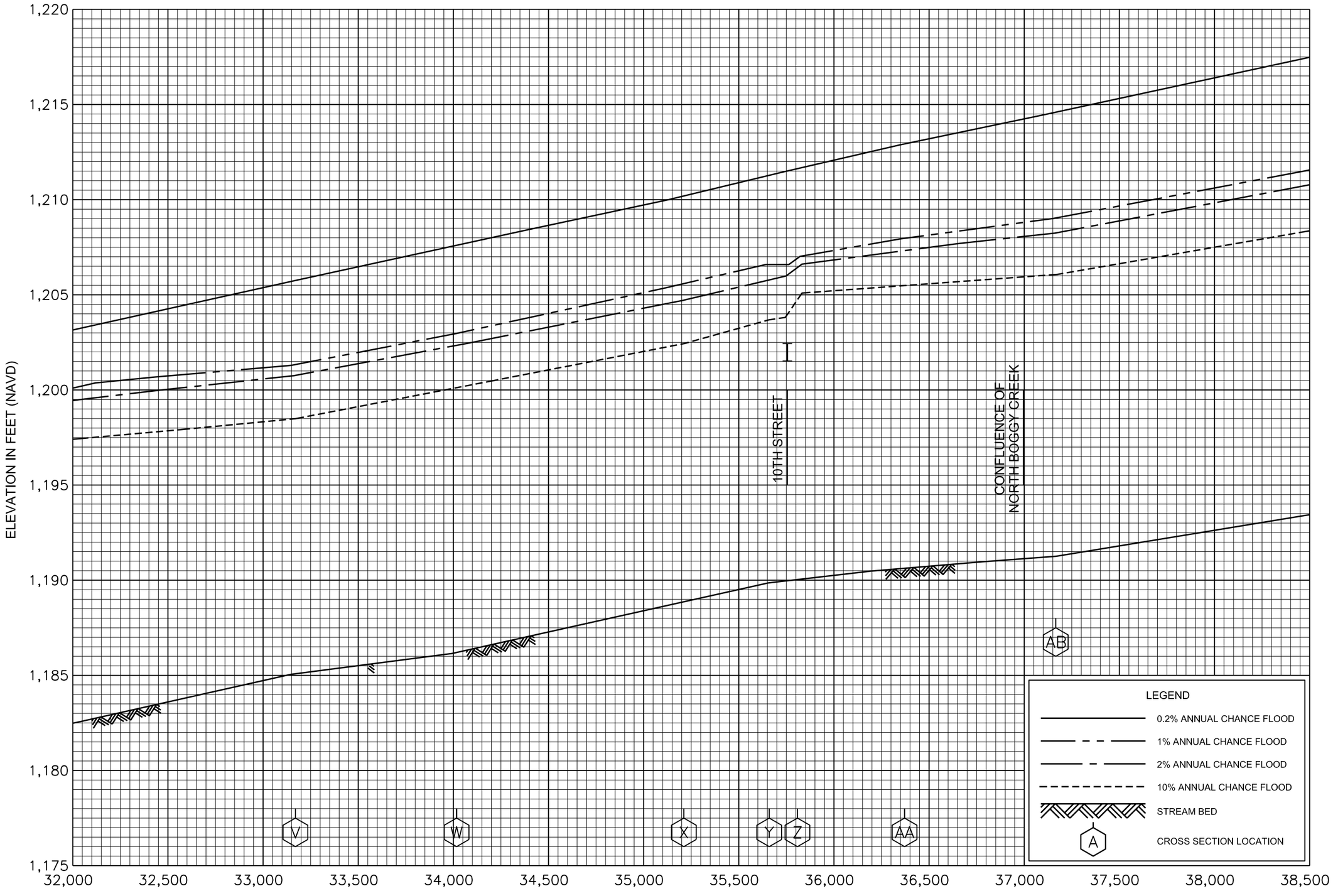
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

06P



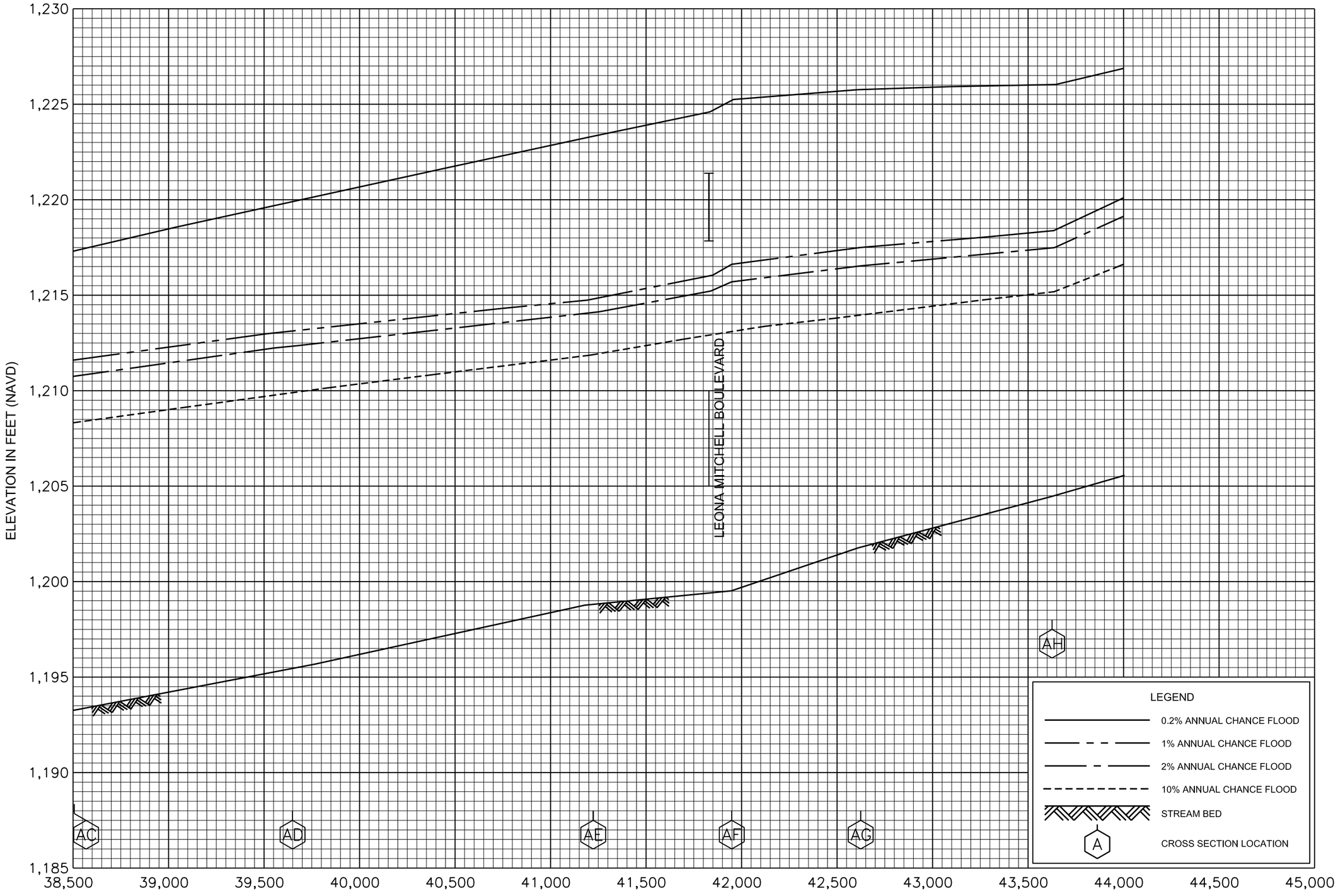
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

07P



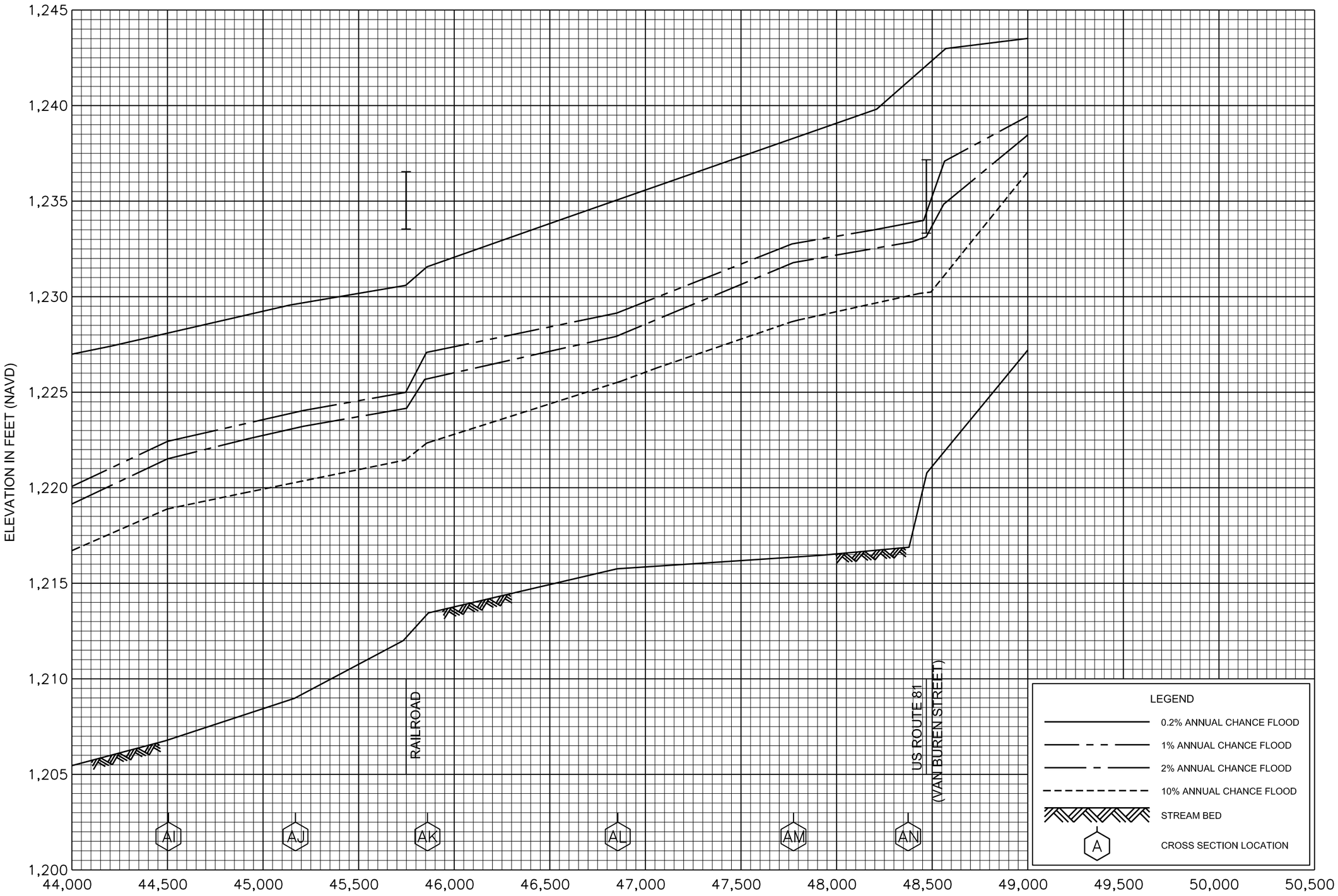
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

08P



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SKELETON CREEK

FLOOD PROFILES

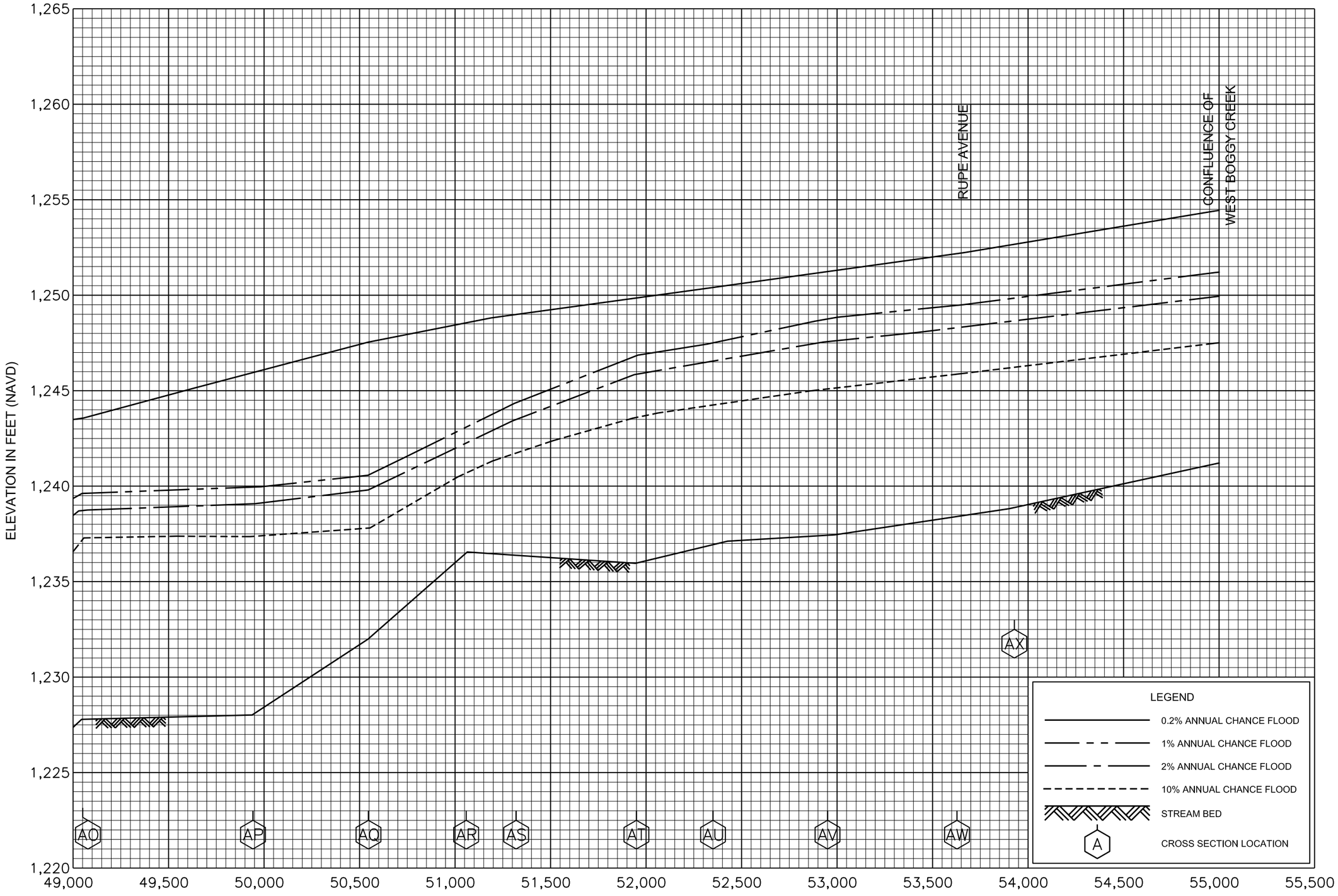
BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

09P

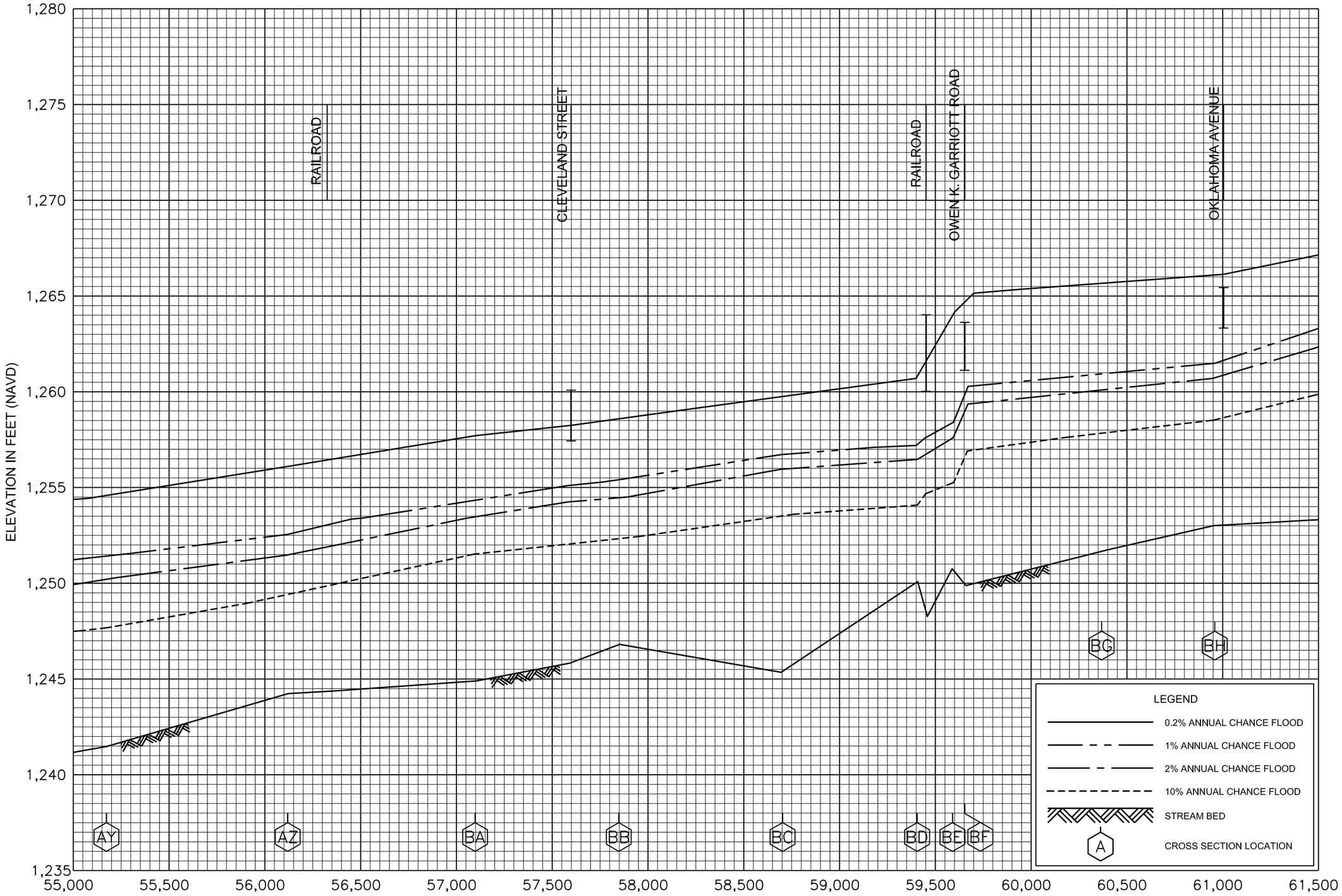


FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



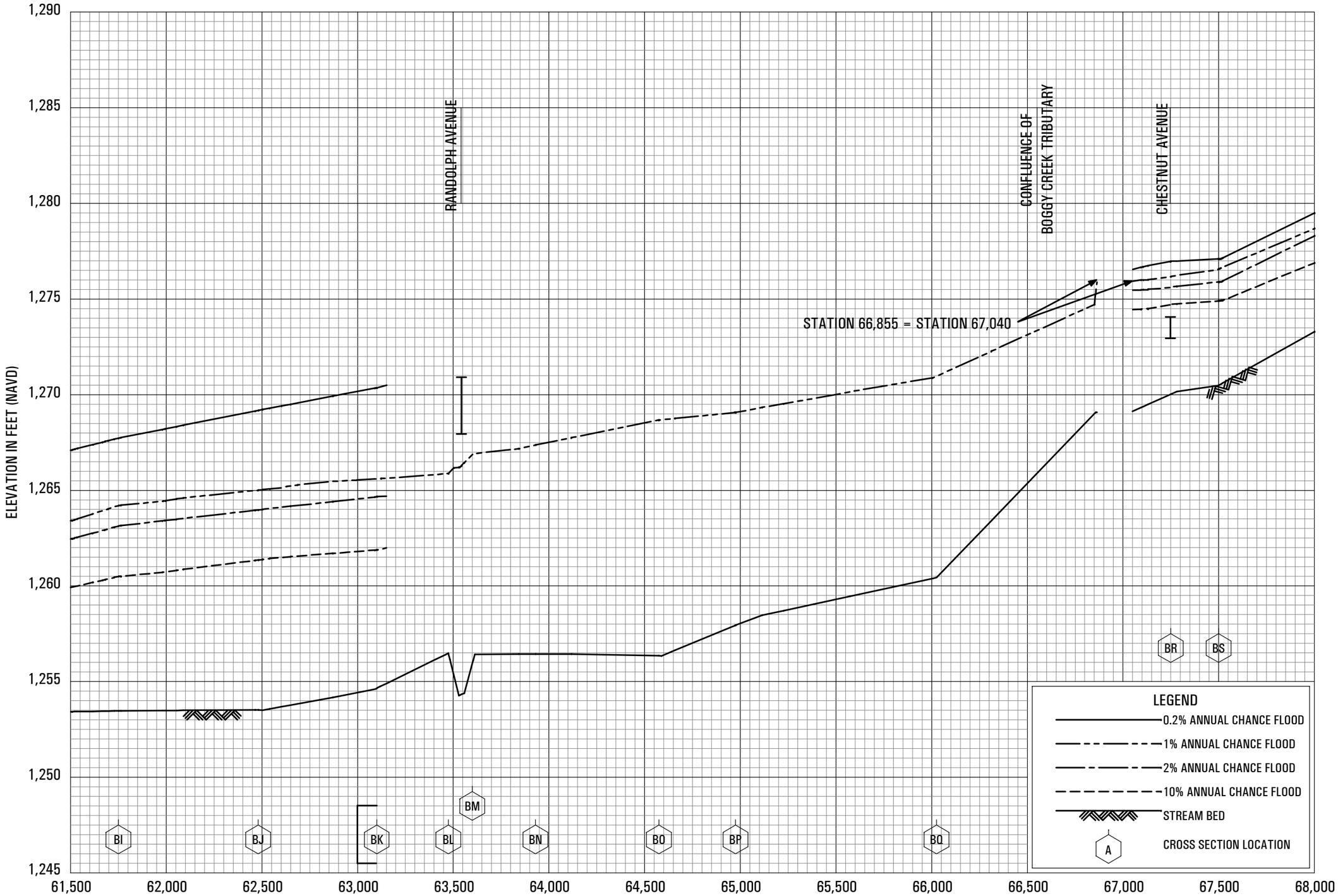
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

11P



FLOOD PROFILES

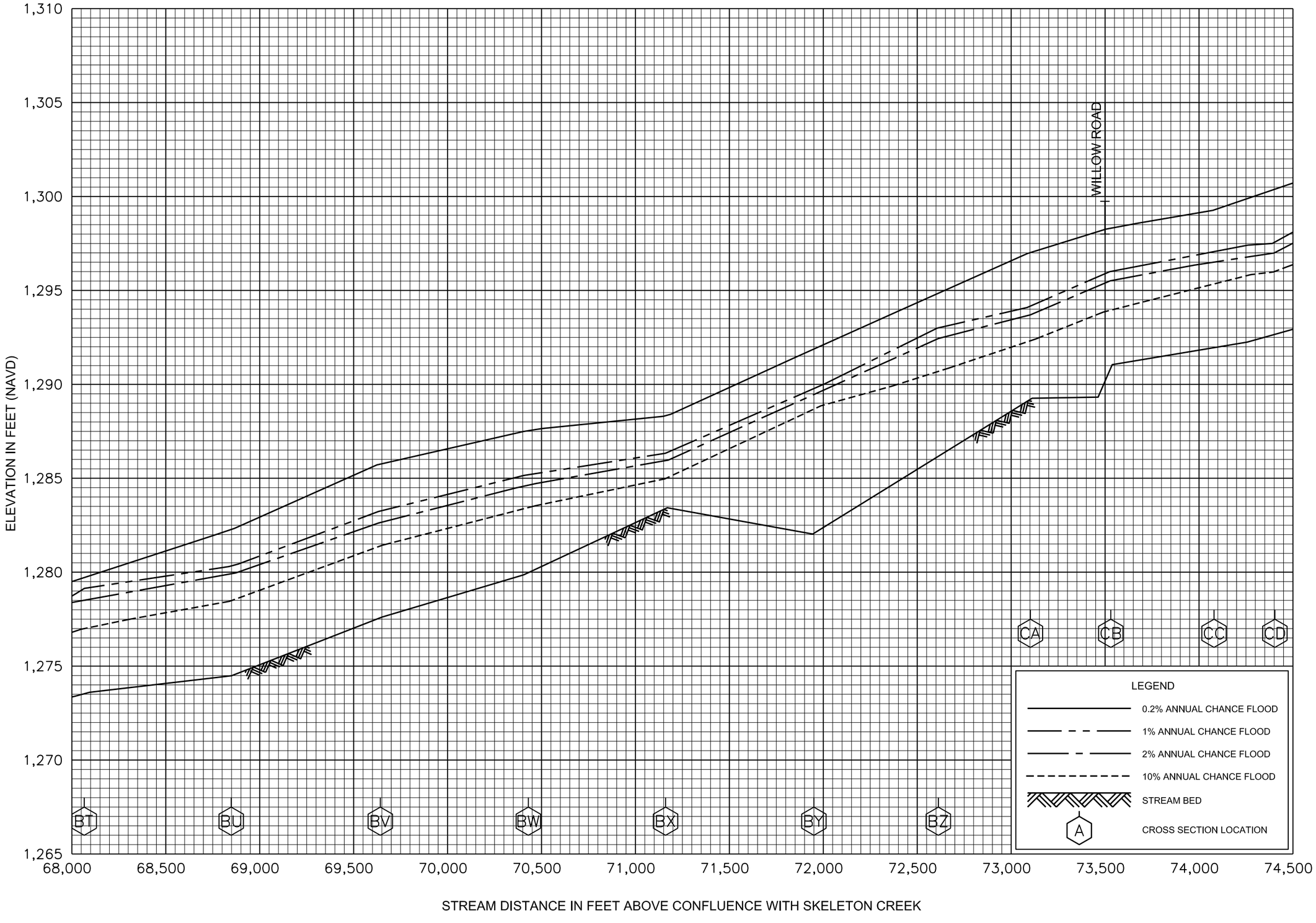
BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFILED COUNTY, OK

AND INCORPORATED AREAS

12P



FLOOD PROFILES

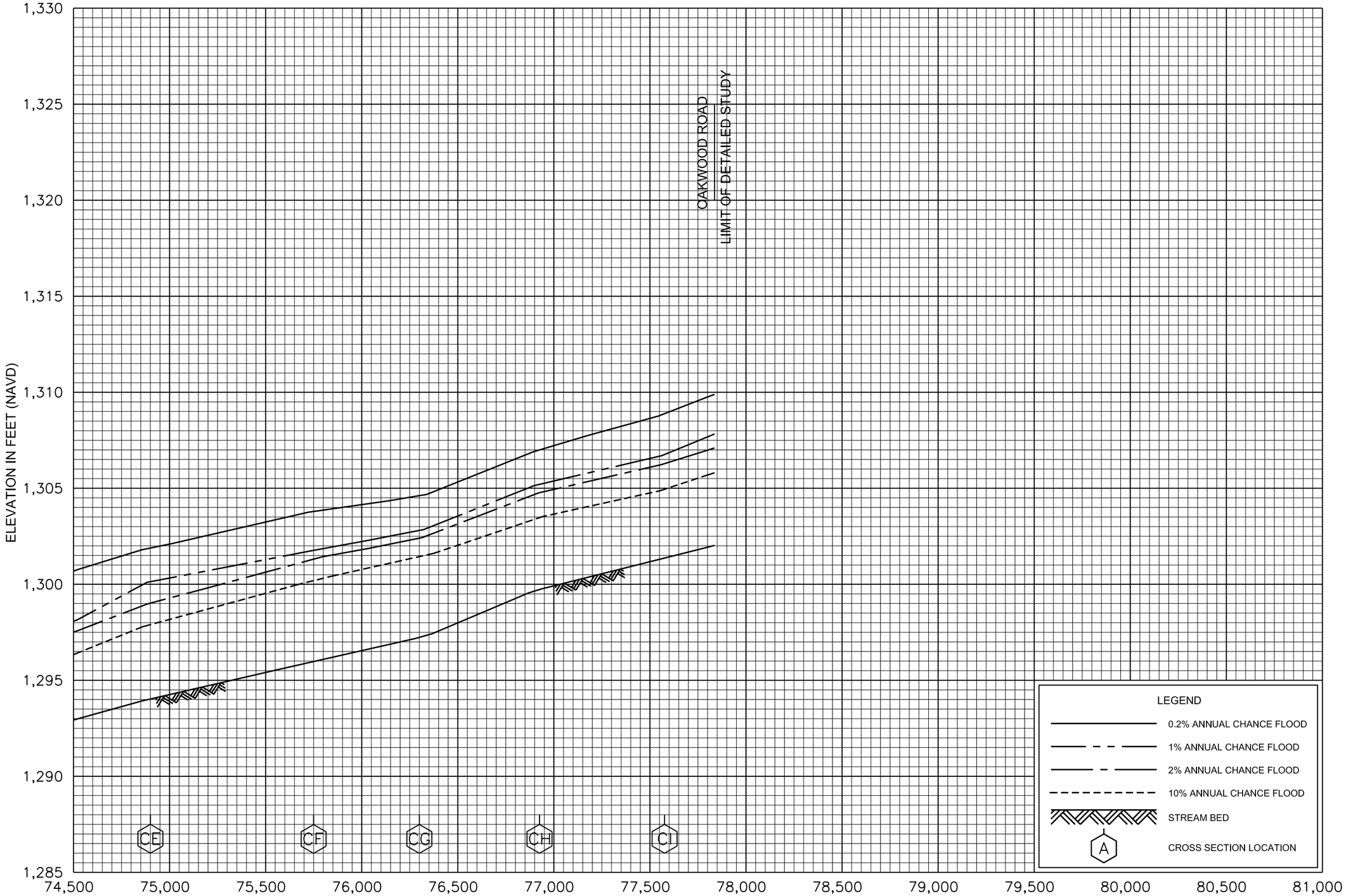
BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

13P



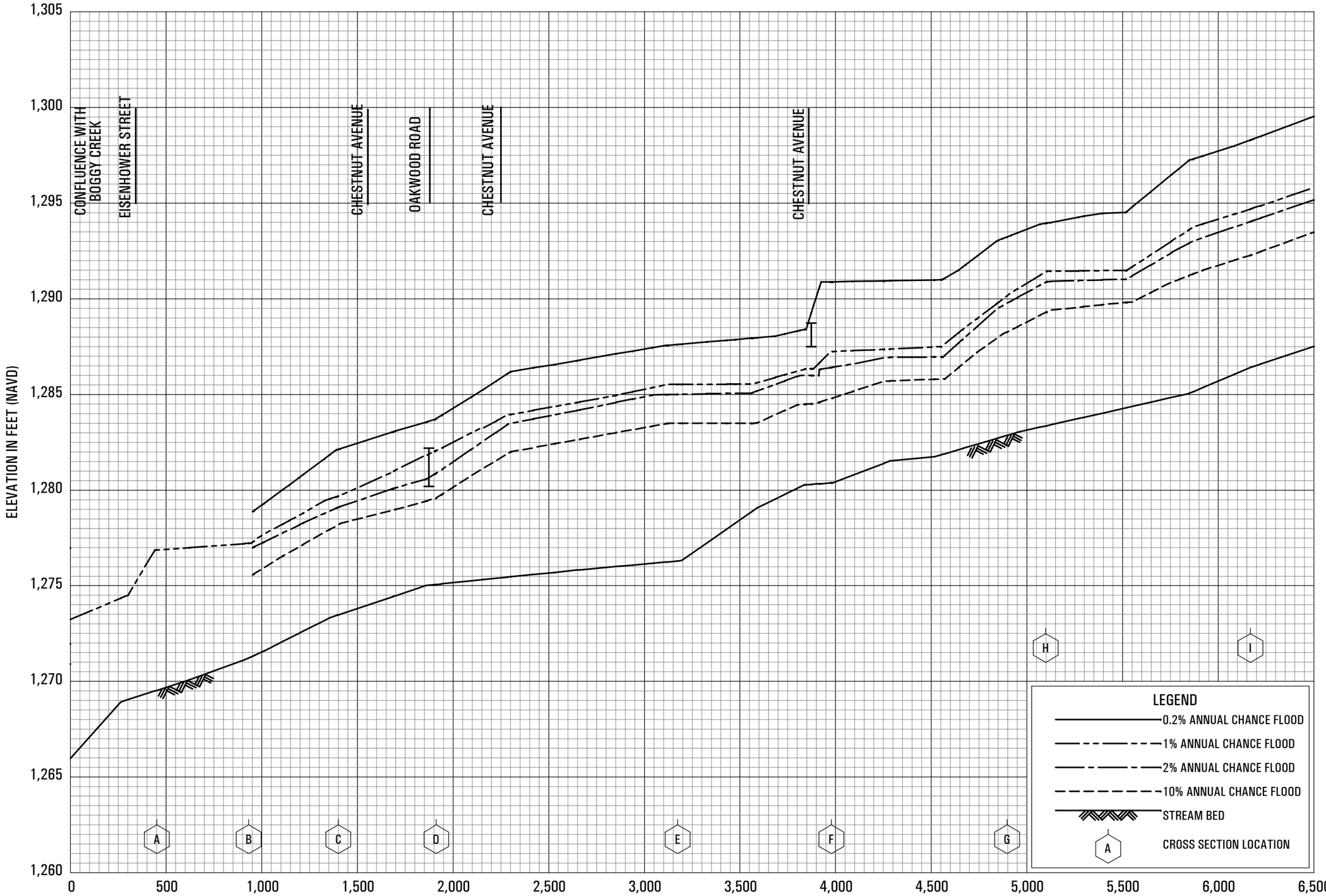
FLOOD PROFILES

BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



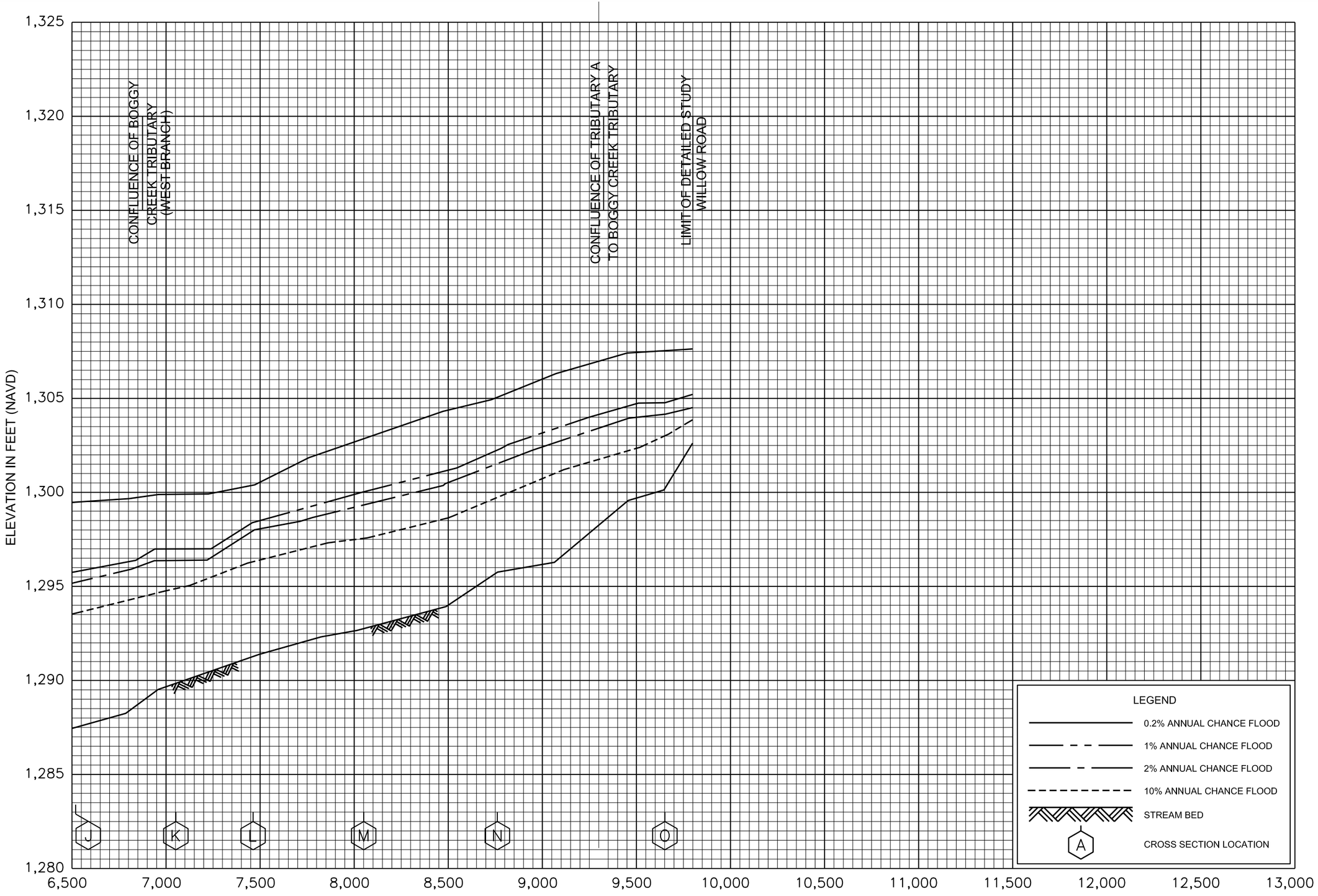
FLOOD PROFILES

BOGGY CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

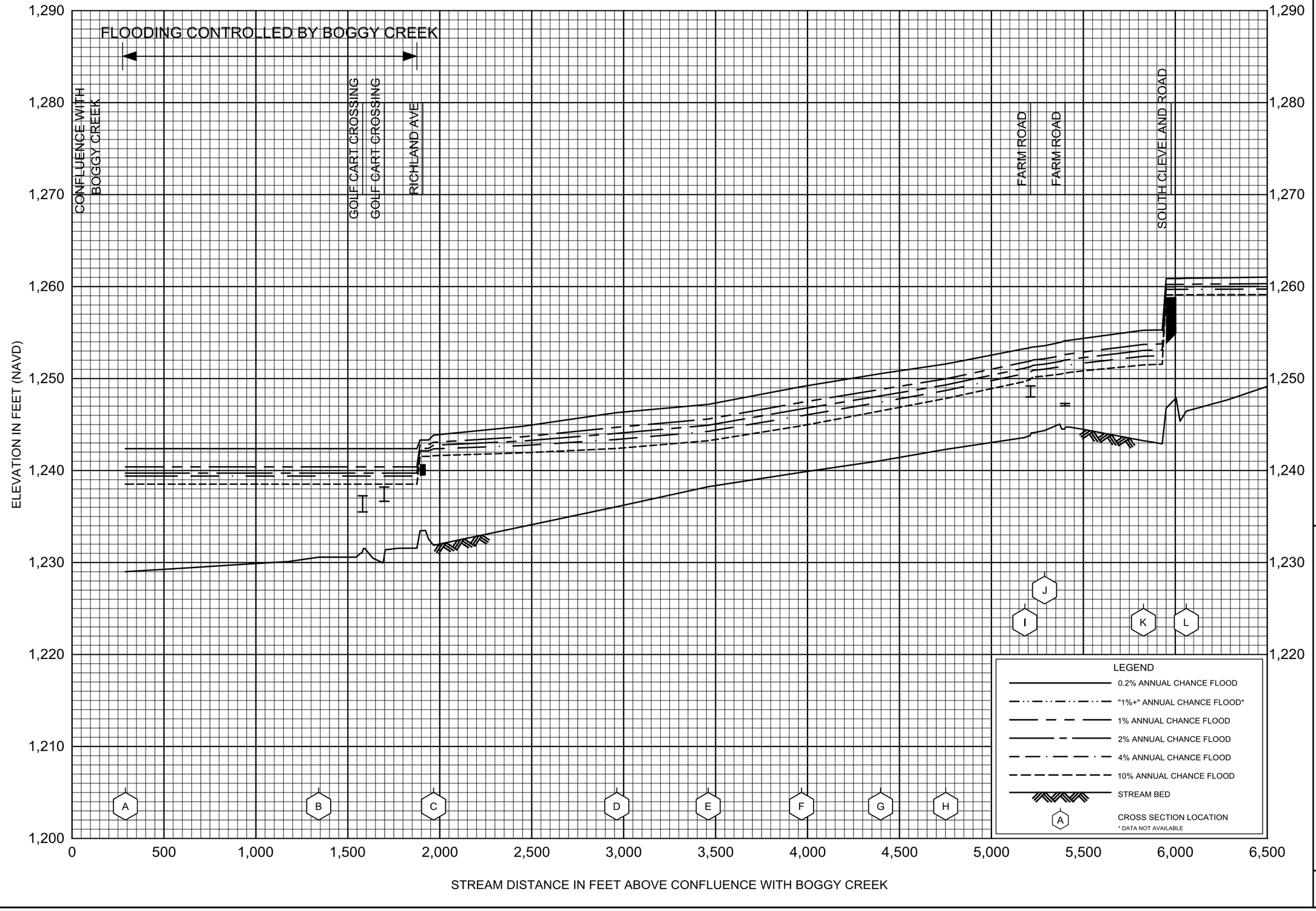


FLOOD PROFILES

BOGGY CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



FLOOD PROFILES

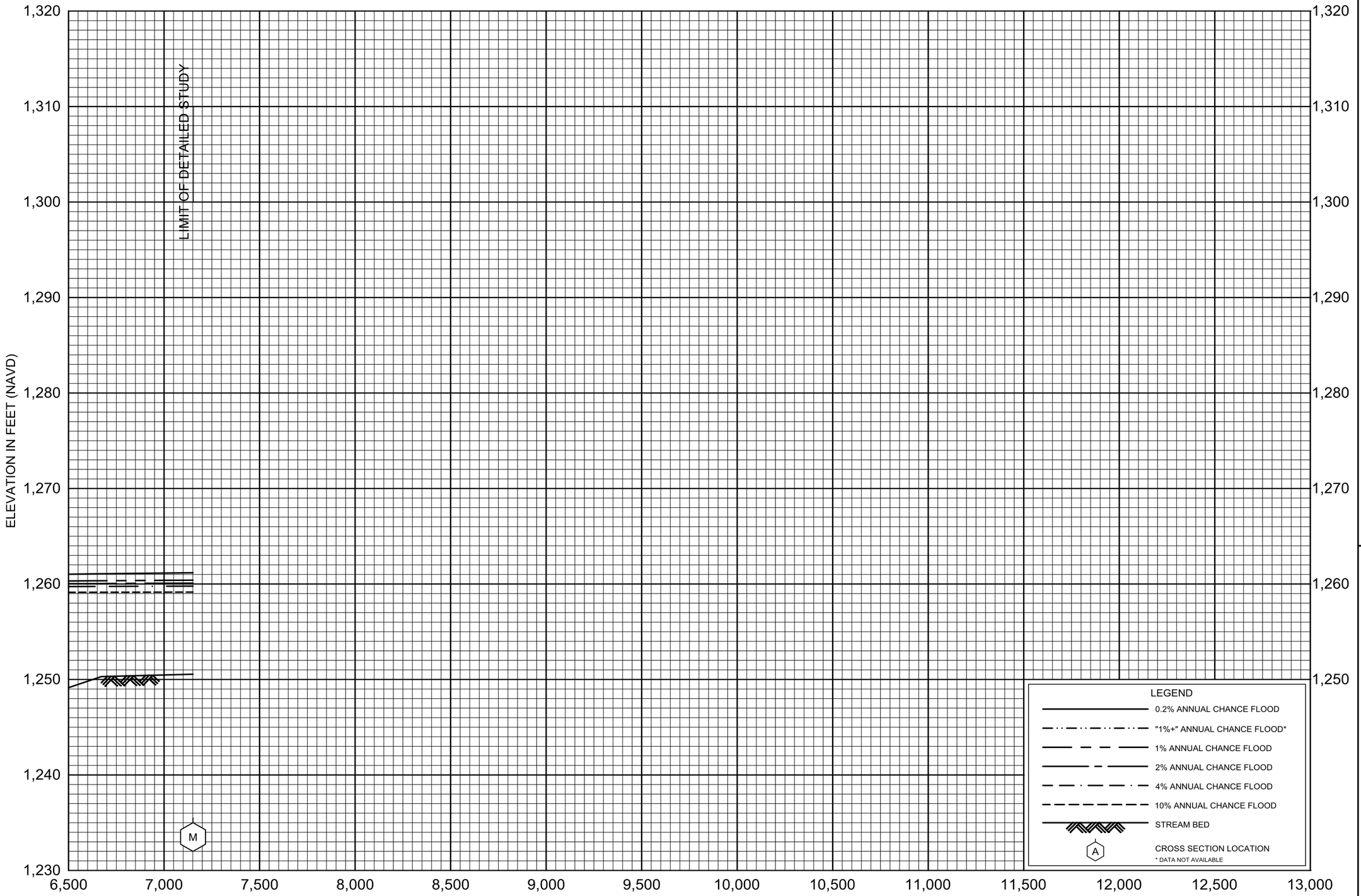
BOGGY CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

17P



FLOOD PROFILES

BOGGY CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

FLOODING CONTROLLED
BY BOGGY CREEK TRIB 1

CONFLUENCE WITH BOGGY CREEK TRIB 1
GOLF CART CROSSING
GOLF CART CROSSING
RICHLAND AVE
PRIVATE CROSSING
CULVERT
NORMAN RD
PRIVATE CROSSING
CULVERT
PRIVATE CROSSING
DRIVEWAY
CULVERT

ELEVATION IN FEET (NAVD)

1,270
1,265
1,260
1,255
1,250
1,245
1,240
1,235
1,230
1,225

0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
4,500
5,000
5,500
6,000
6,500

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH BOGGY CREEK TRIBUTARY 1

A
B
C
D
E
F
G

LEGEND
- 0.2% ANNUAL CHANCE FLOOD
- "1%+" ANNUAL CHANCE FLOOD*
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 4% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- A CROSS SECTION LOCATION

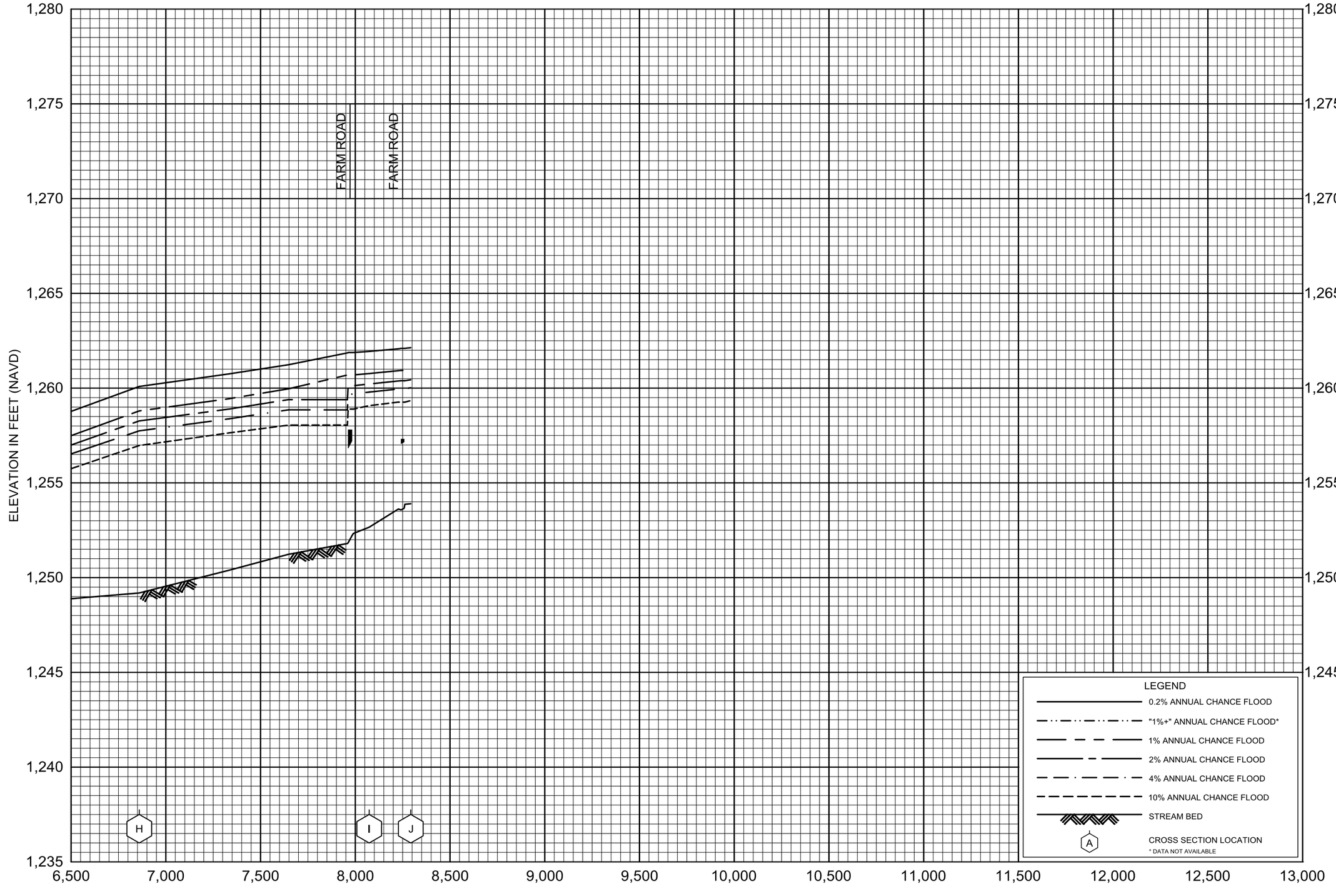
* DATA NOT AVAILABLE

FLOOD PROFILES

BOGGY CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



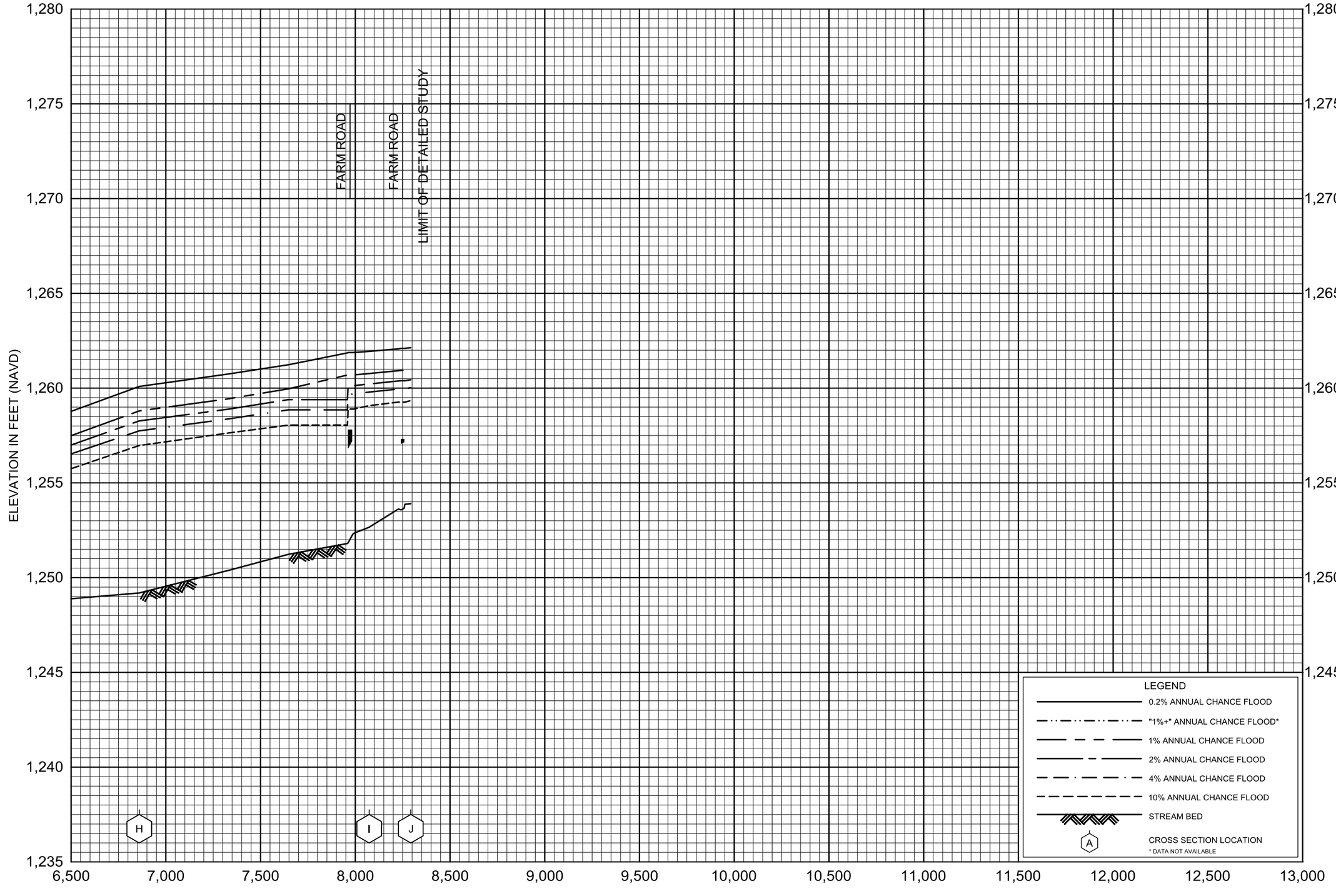
FLOOD PROFILES

BOGGY CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



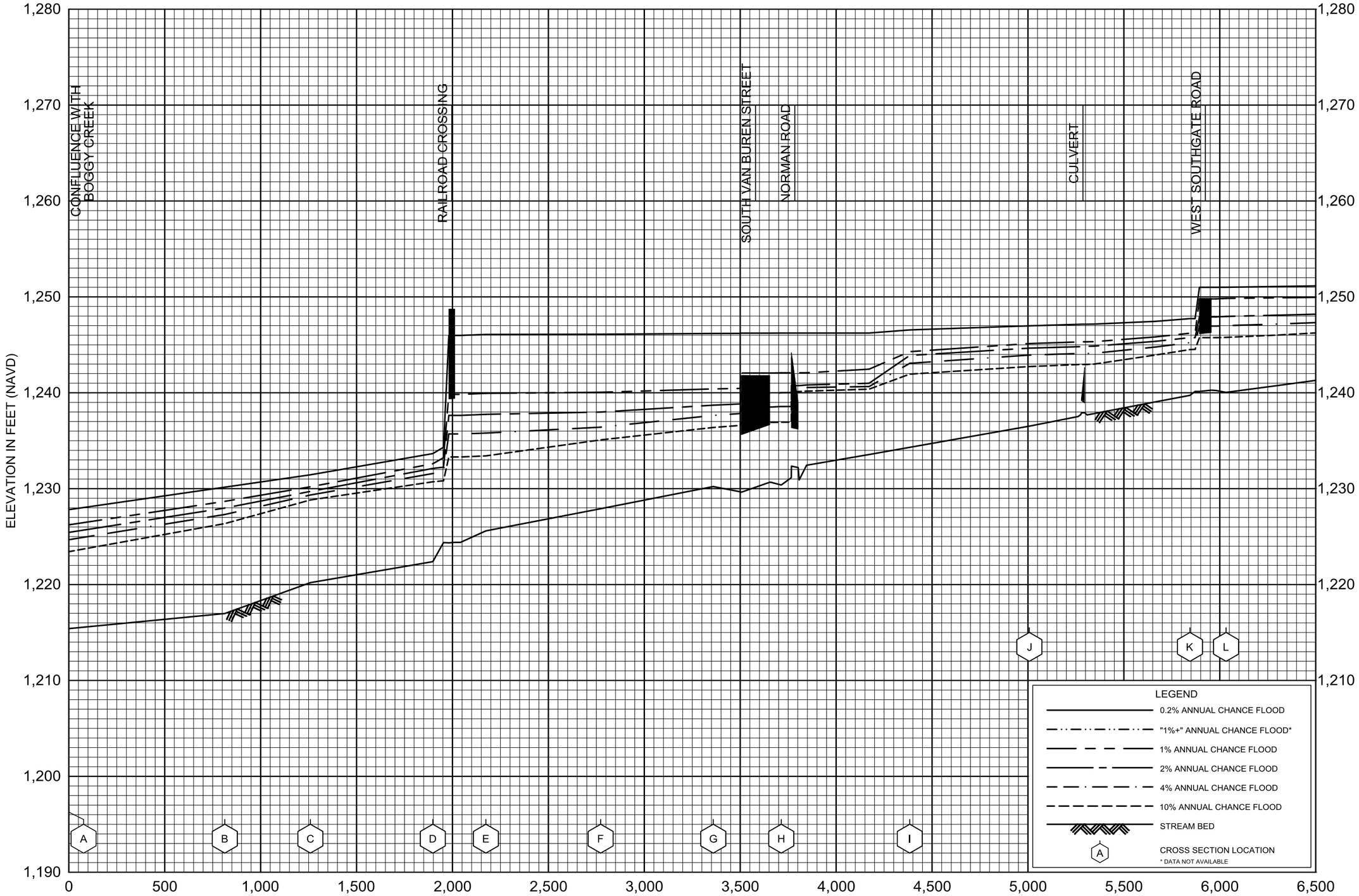
FLOOD PROFILES

BOGGY CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



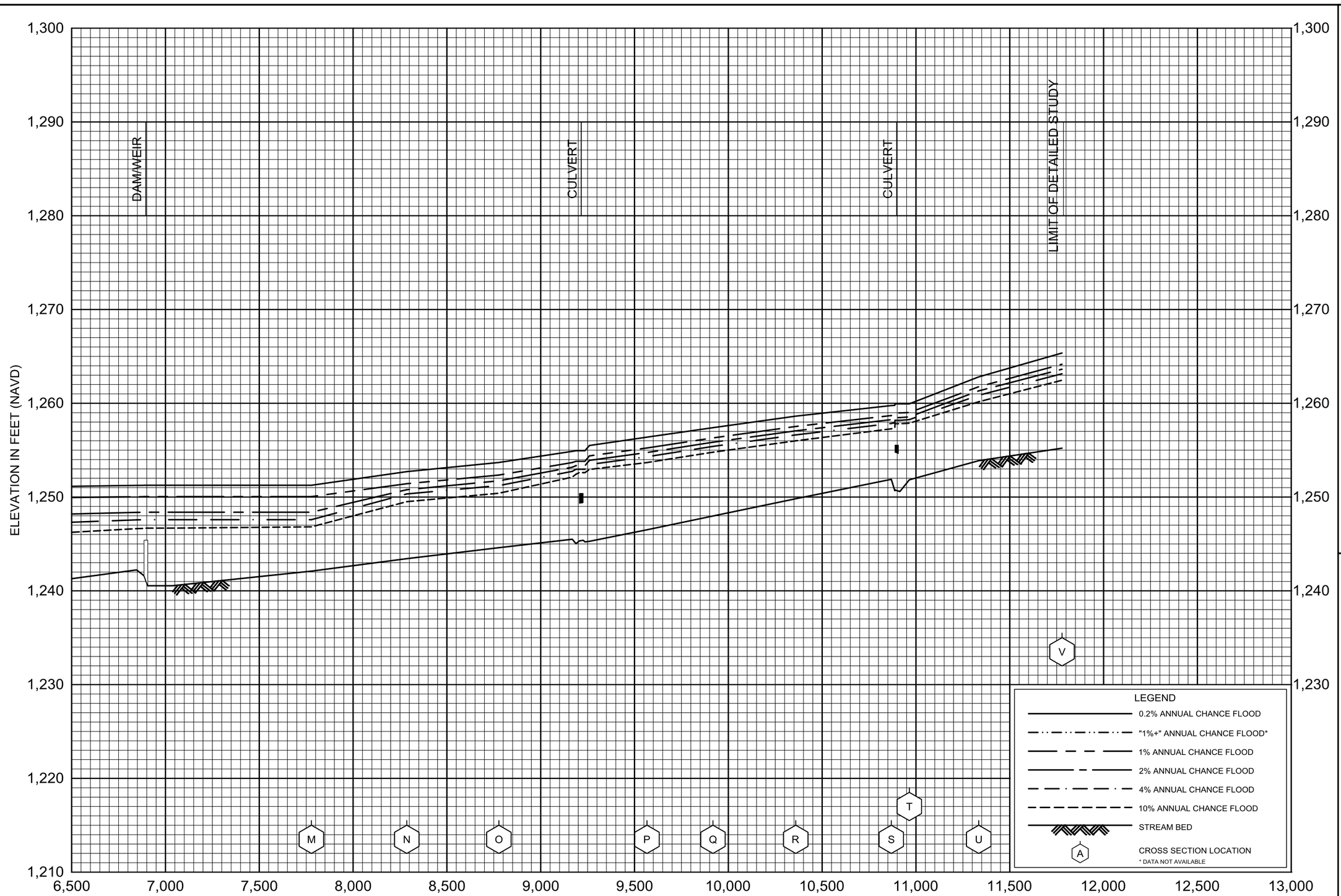
FLOOD PROFILES

BOGGY CREEK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



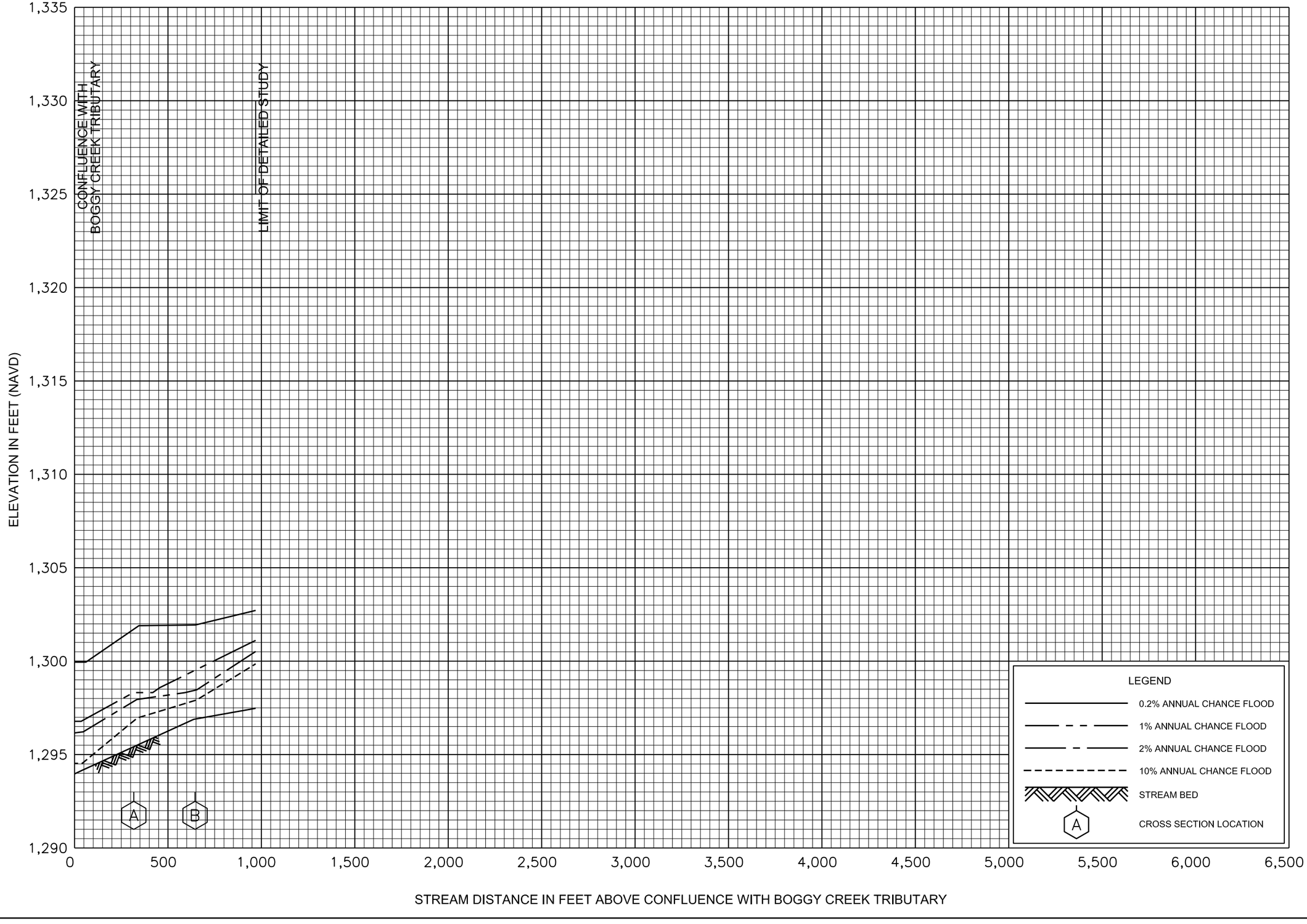
FLOOD PROFILES

BOGGY CREEK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



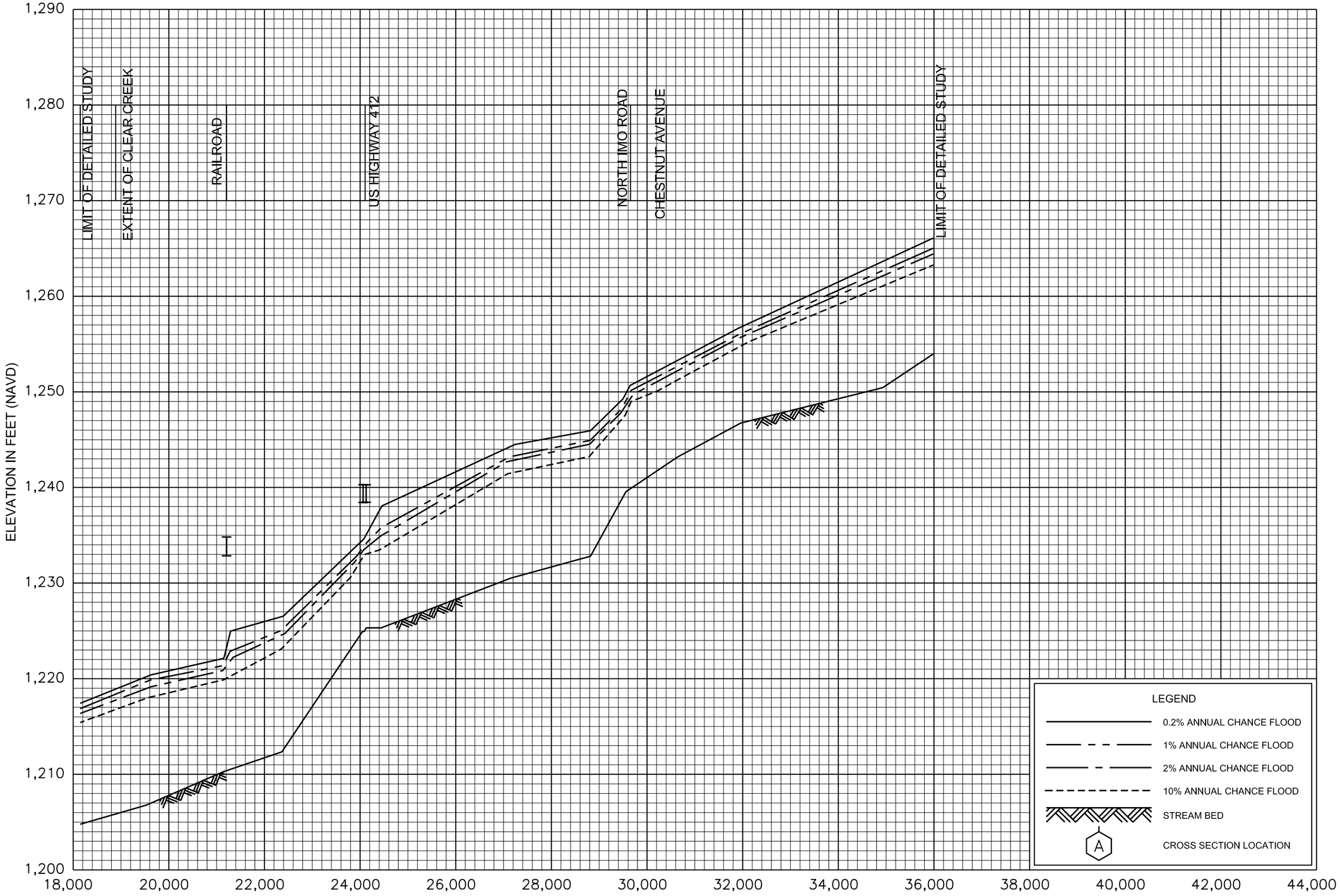
FLOOD PROFILES

BOGGY CREEK TRIBUTARY (WEST BRANCH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

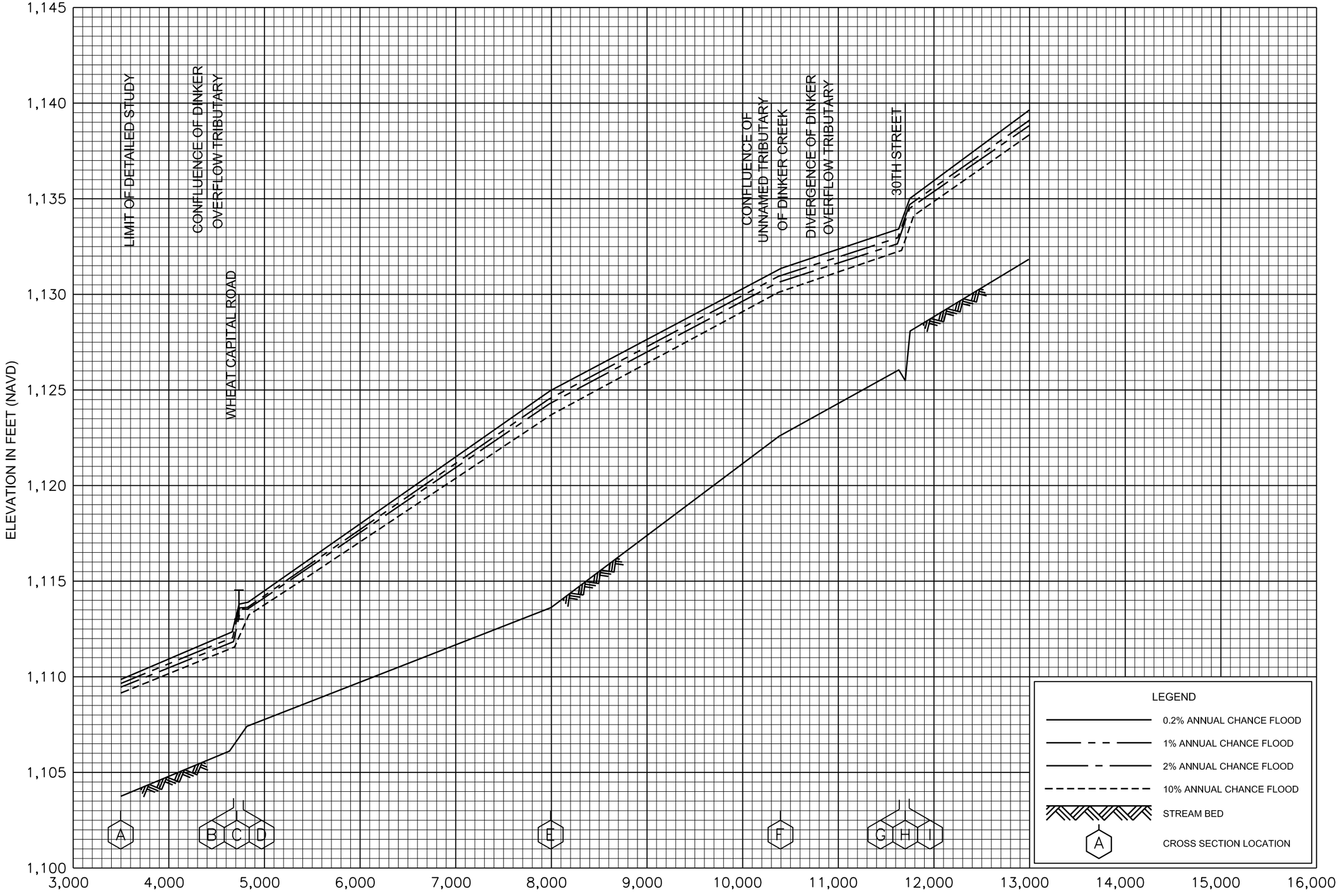


FLOOD PROFILES

CLEAR CREEK -SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



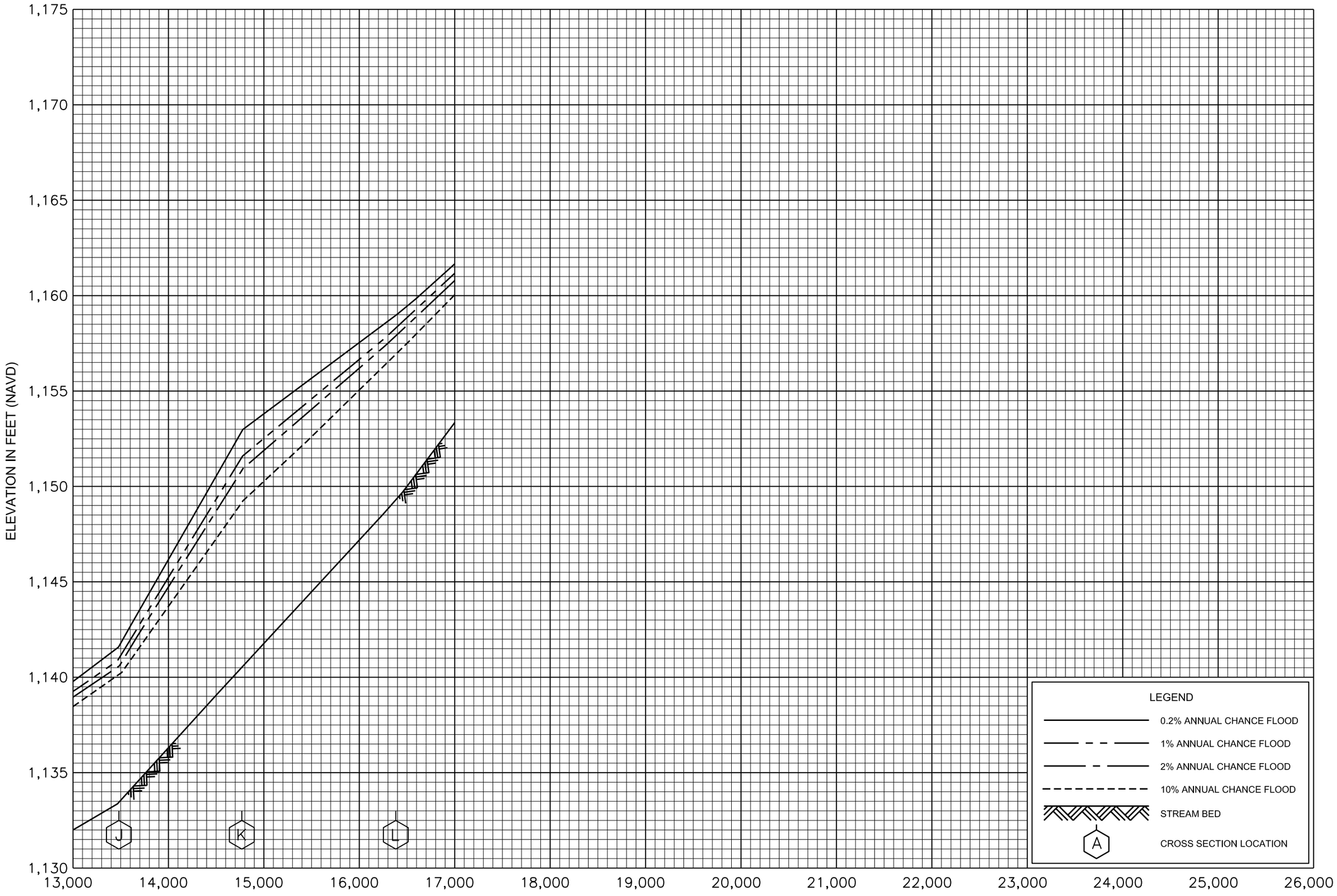
FLOOD PROFILES

DINKER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

25P

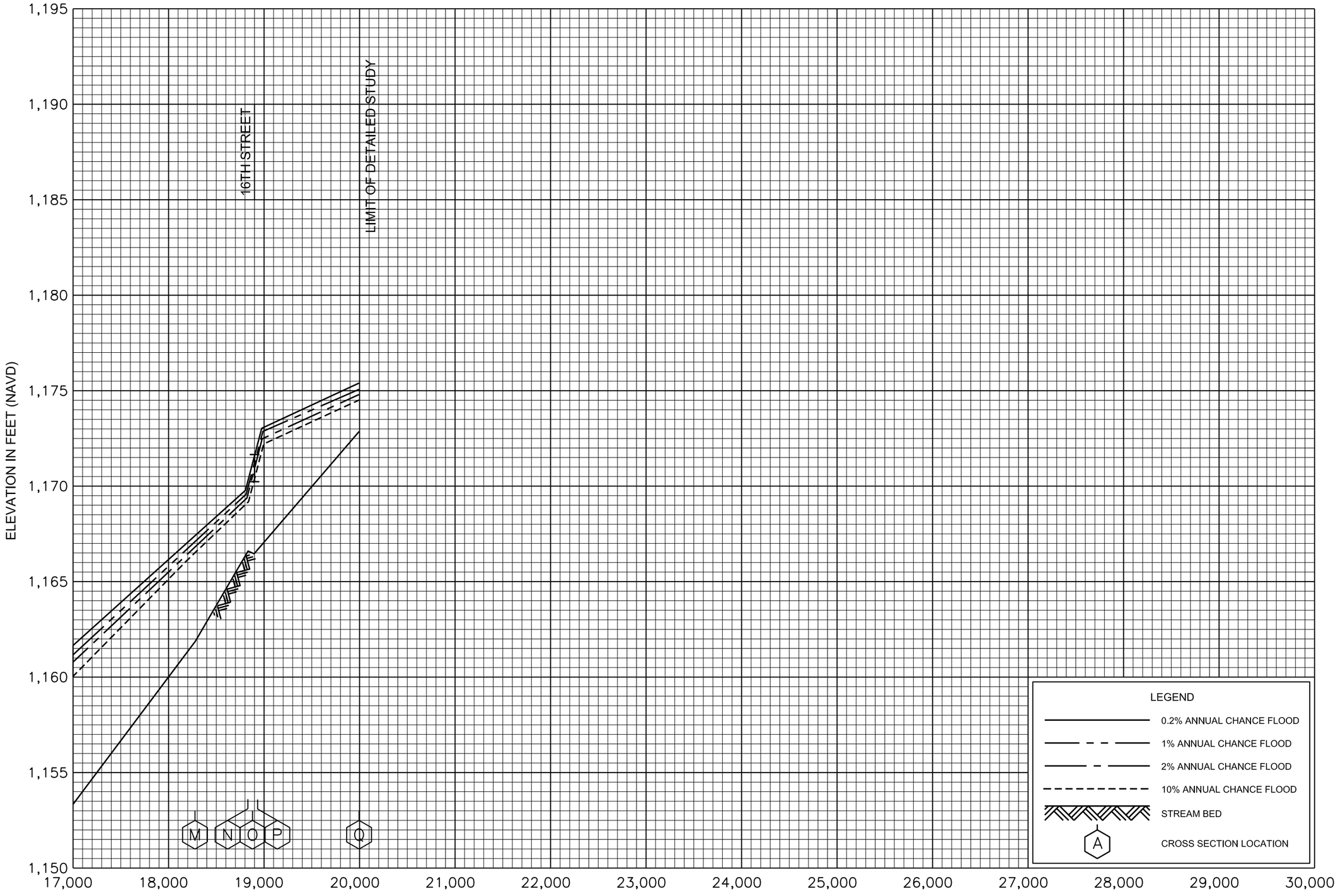


FLOOD PROFILES

DINKER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



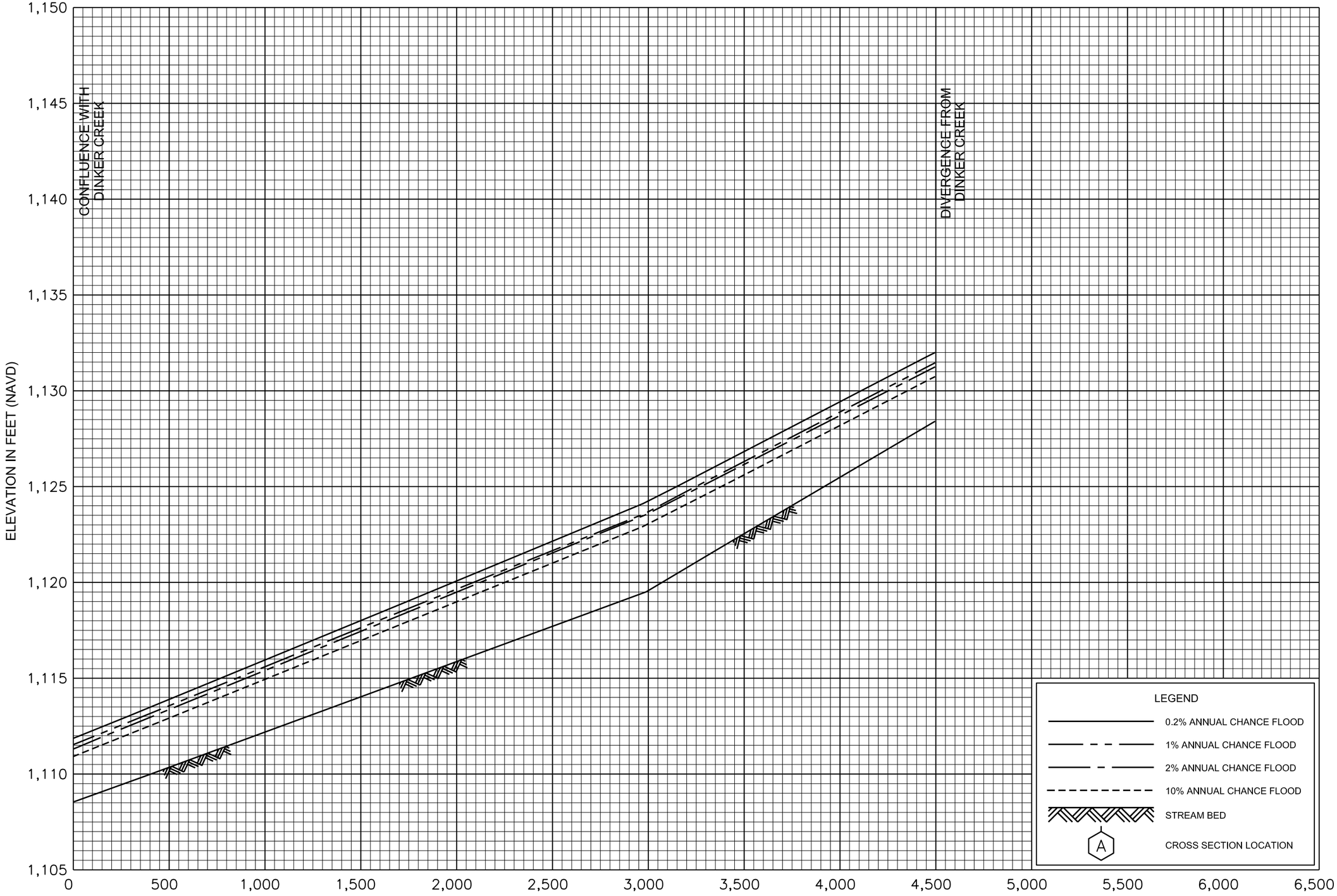
FLOOD PROFILES

DINKER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

27P



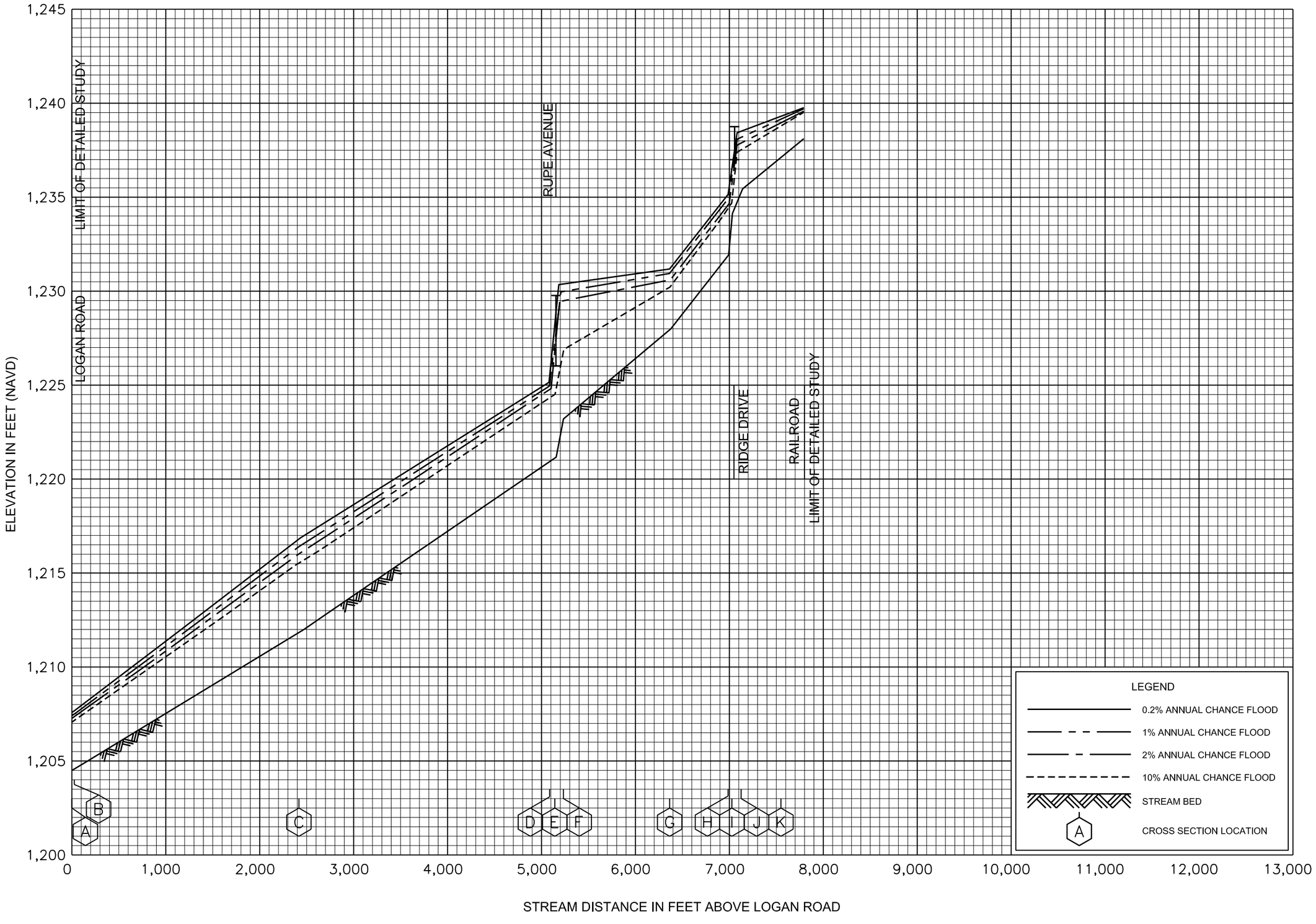
FLOOD PROFILES

DINKER OVERFLOW TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

28P



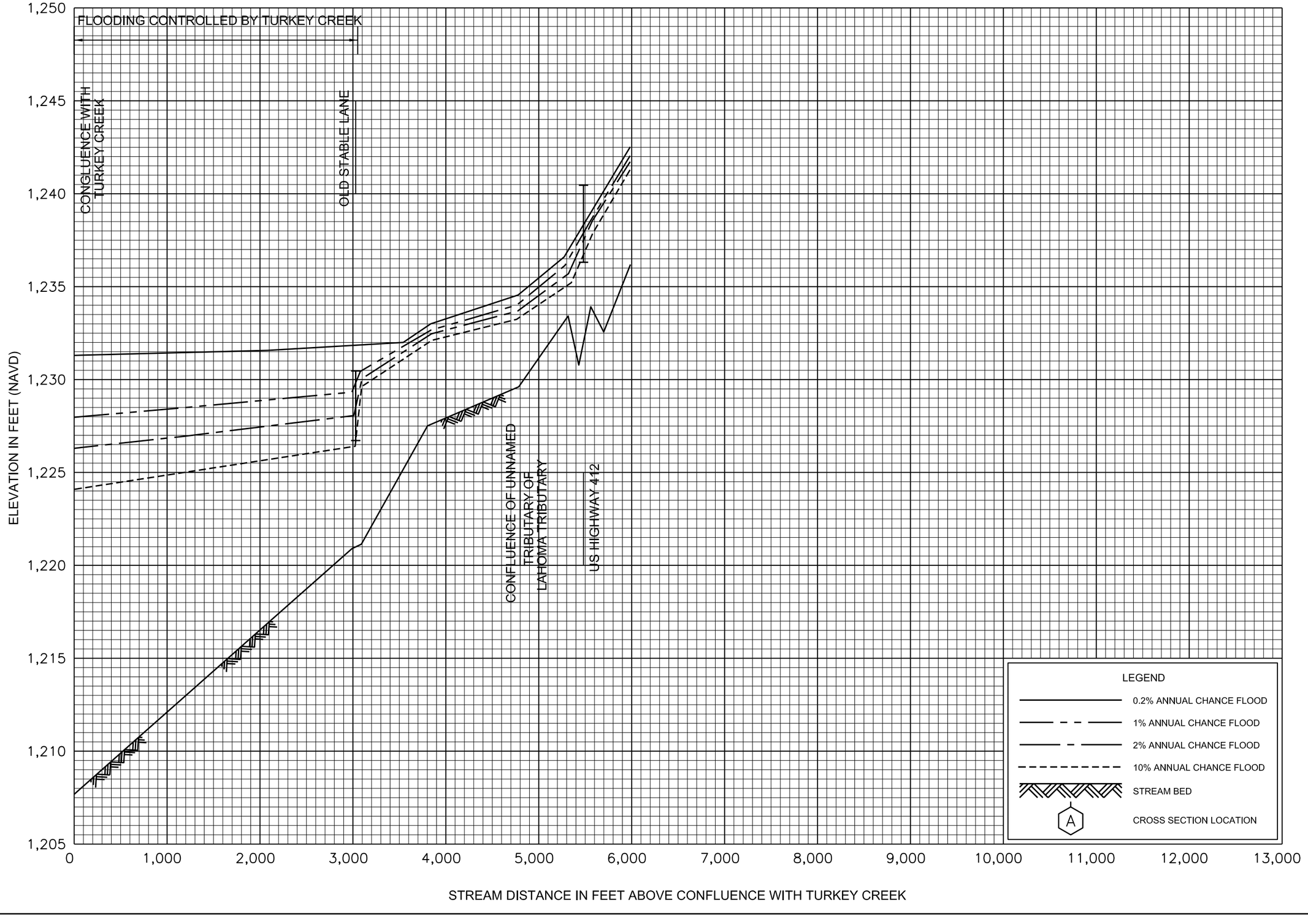
FLOOD PROFILES

GREEN VALLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

29P



FLOOD PROFILES

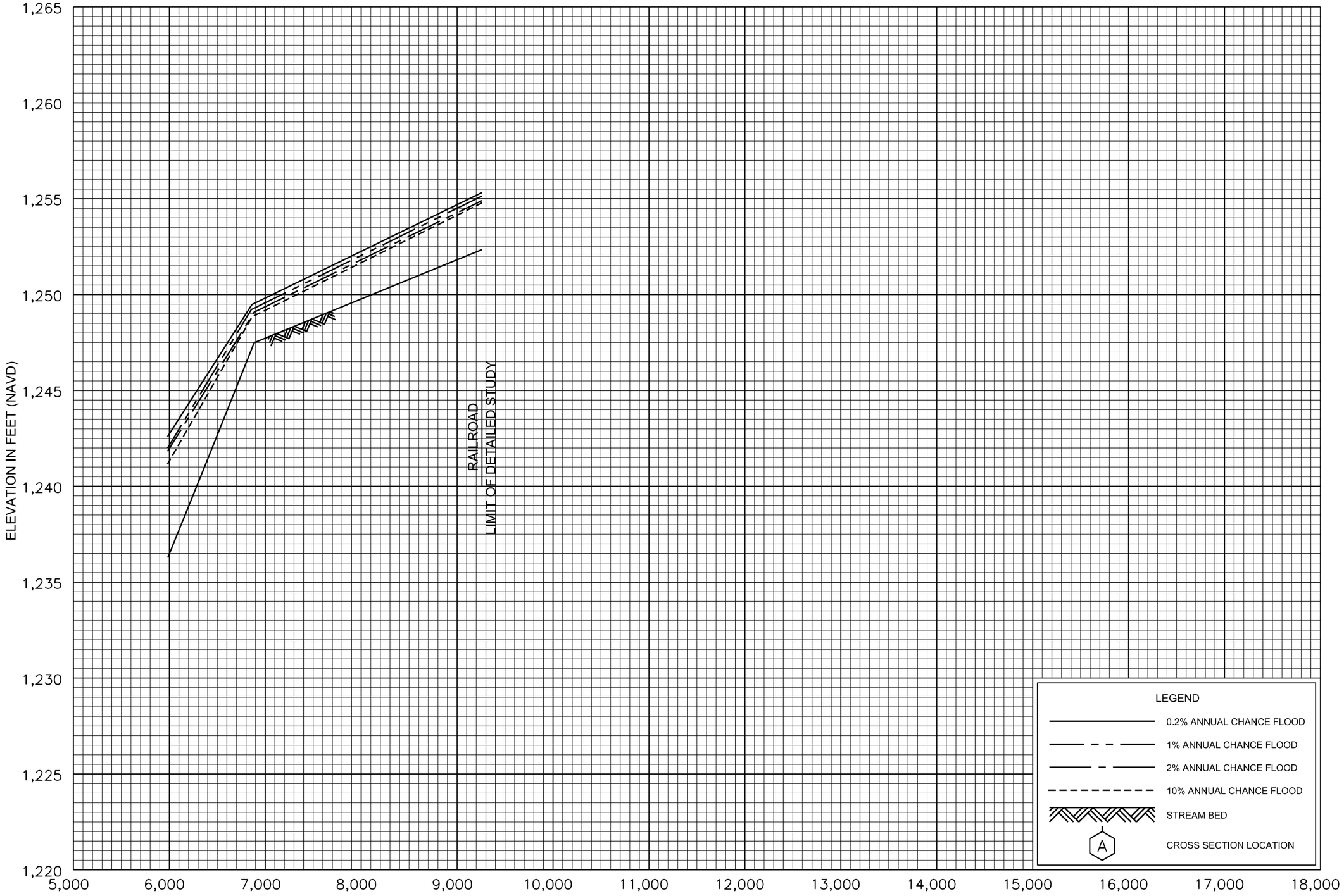
LAHOMA TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

30P



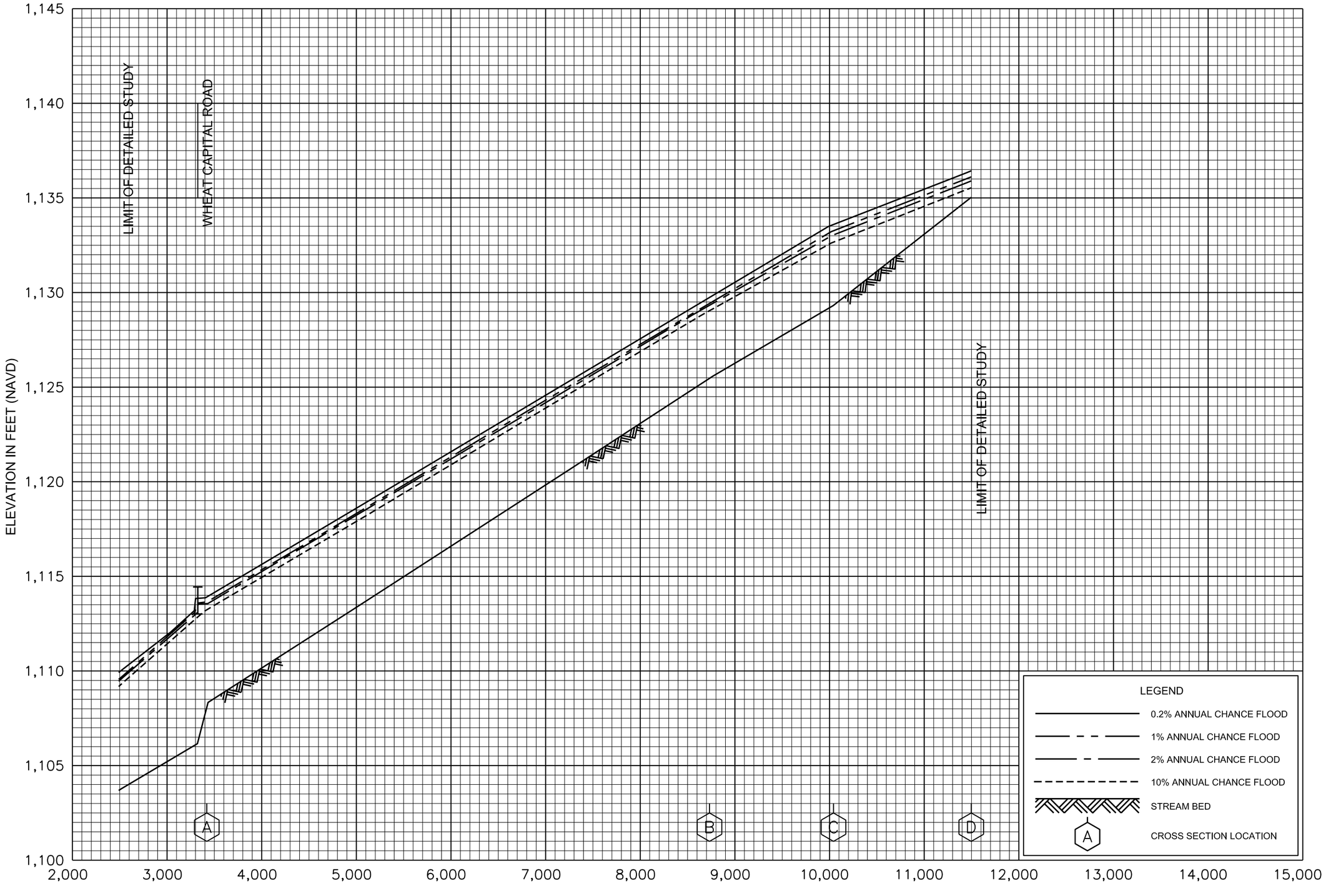
FLOOD PROFILES

LAHOMA TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



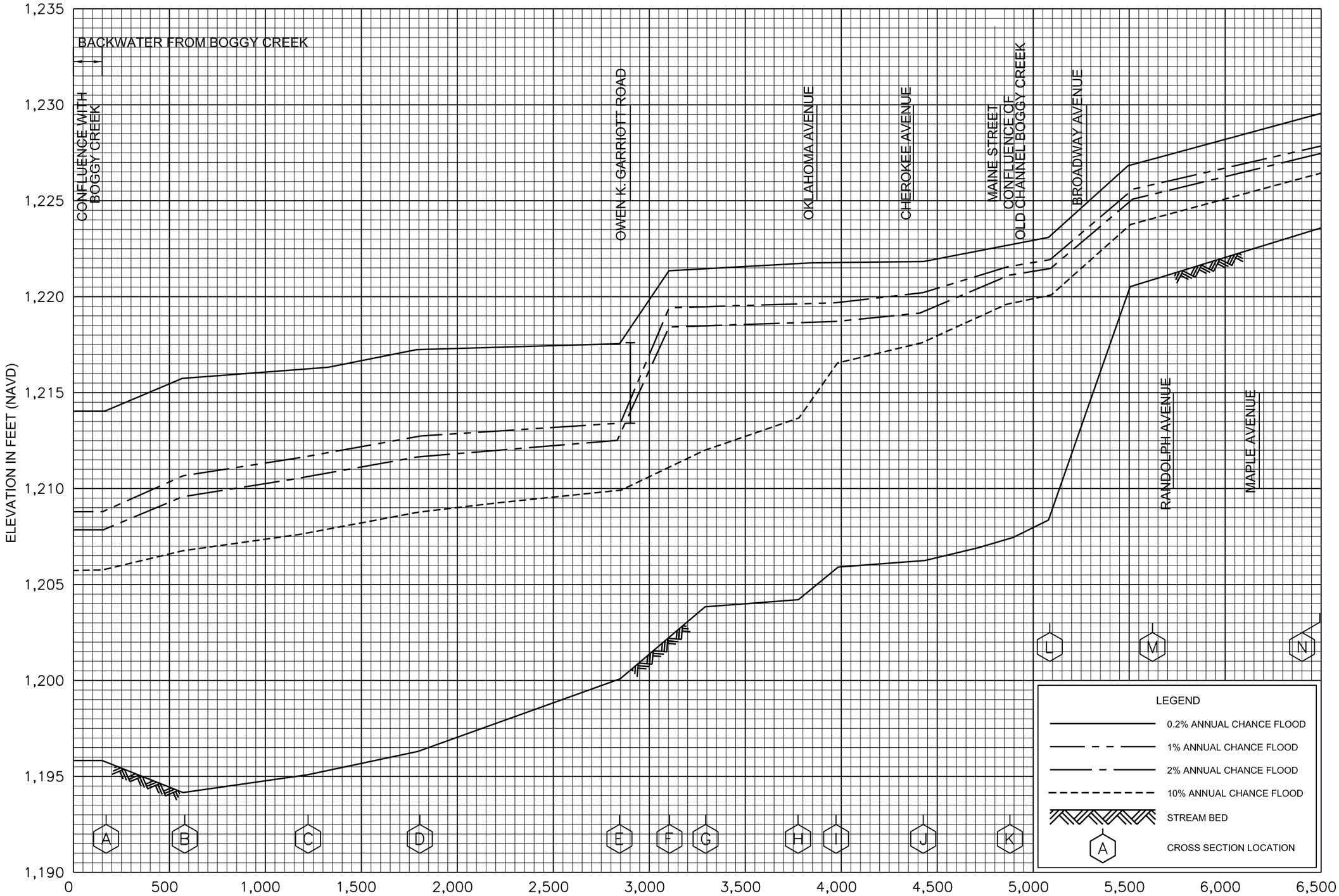
FLOOD PROFILES

LEVENGOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

32P



FLOOD PROFILES

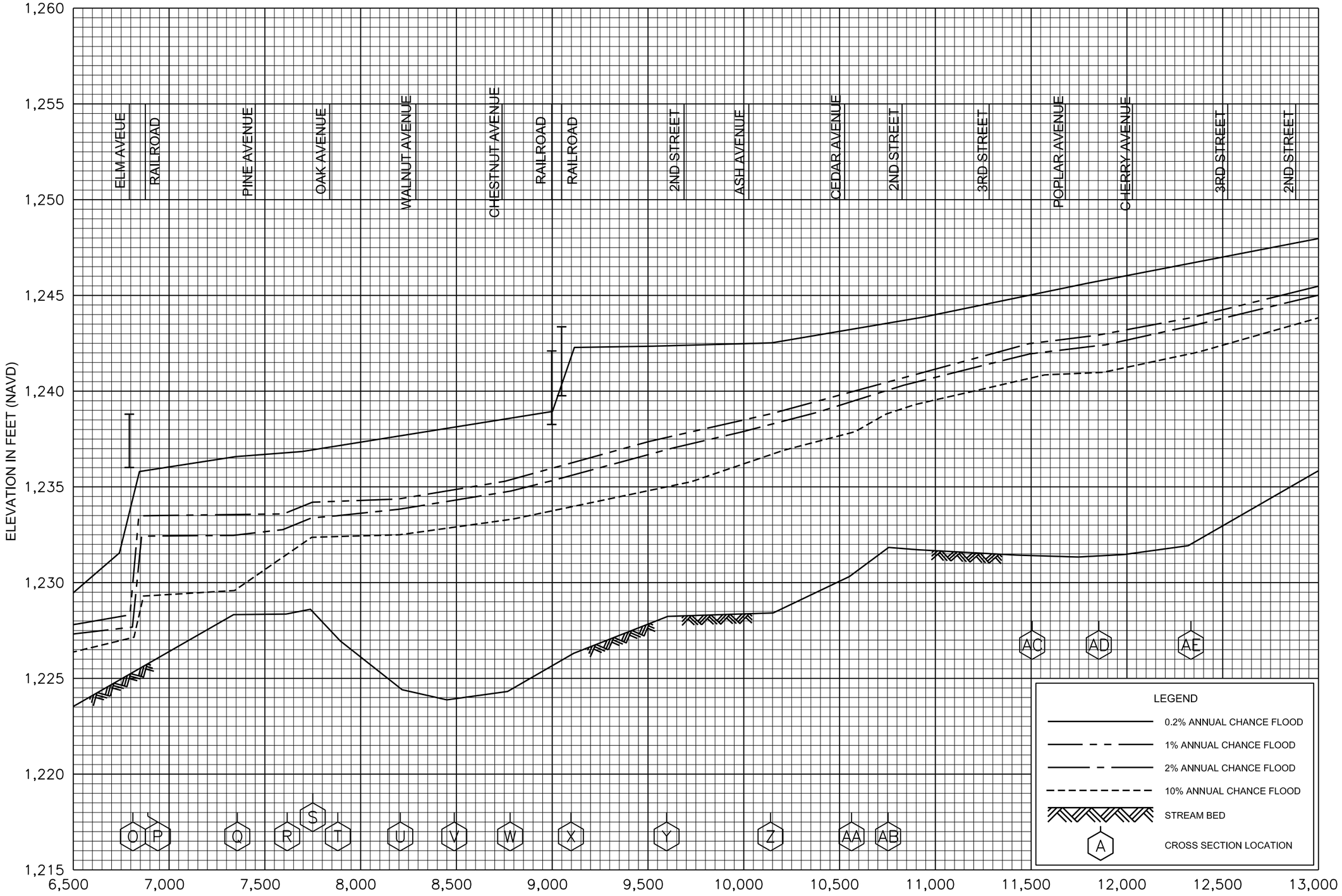
NORTH BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

33P



FLOOD PROFILES

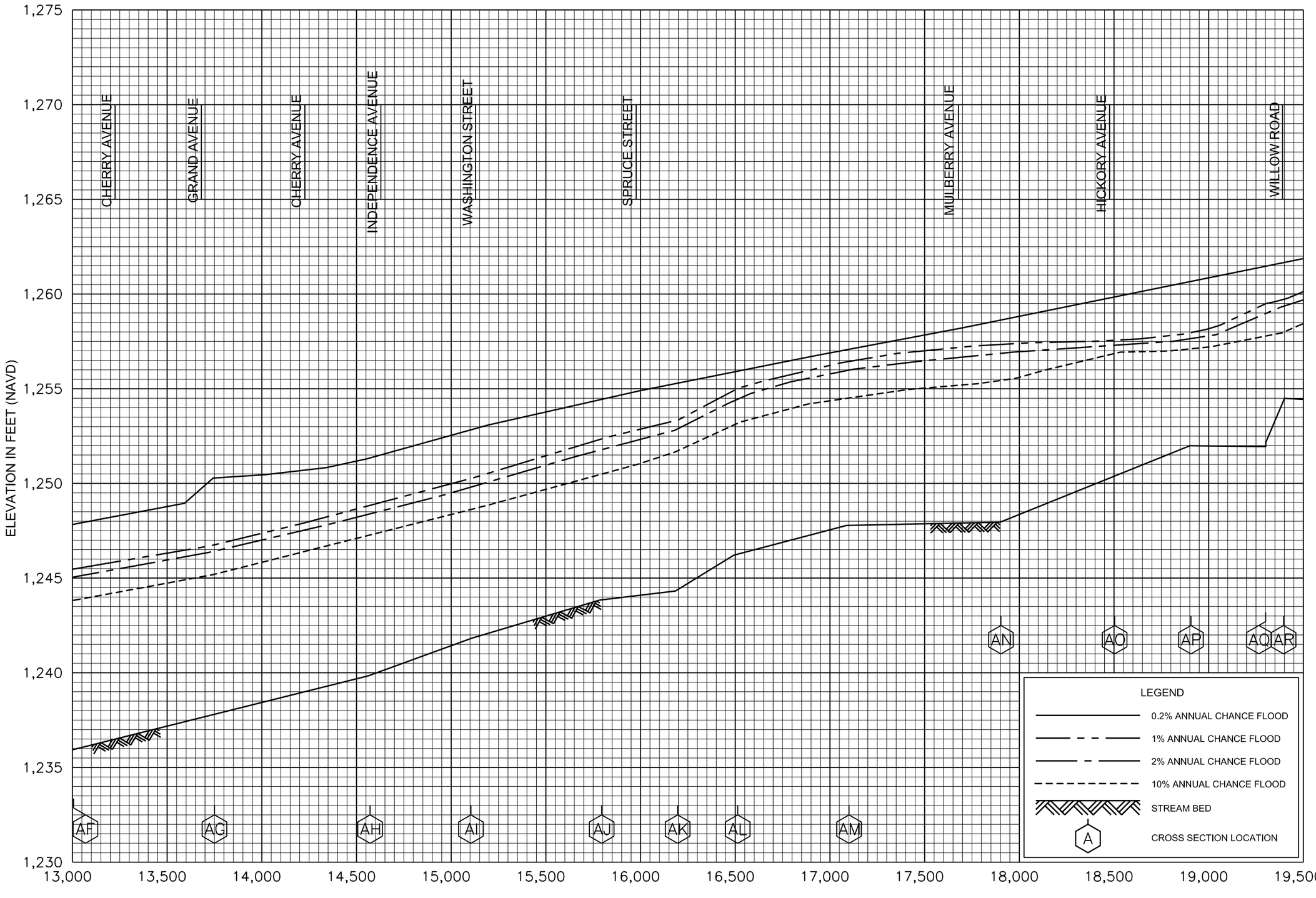
NORTH BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

34P



FLOOD PROFILES

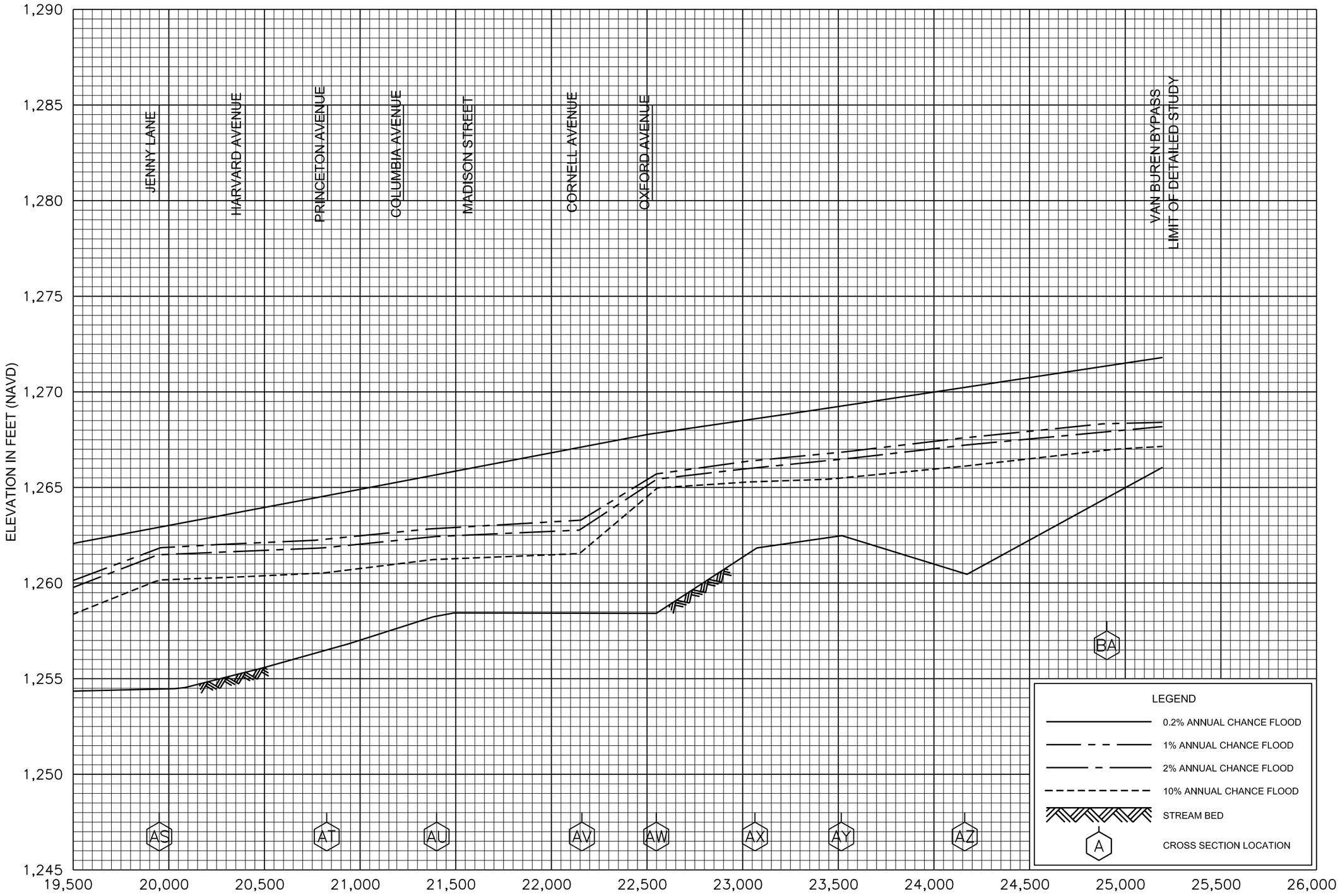
NORTH BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

35P



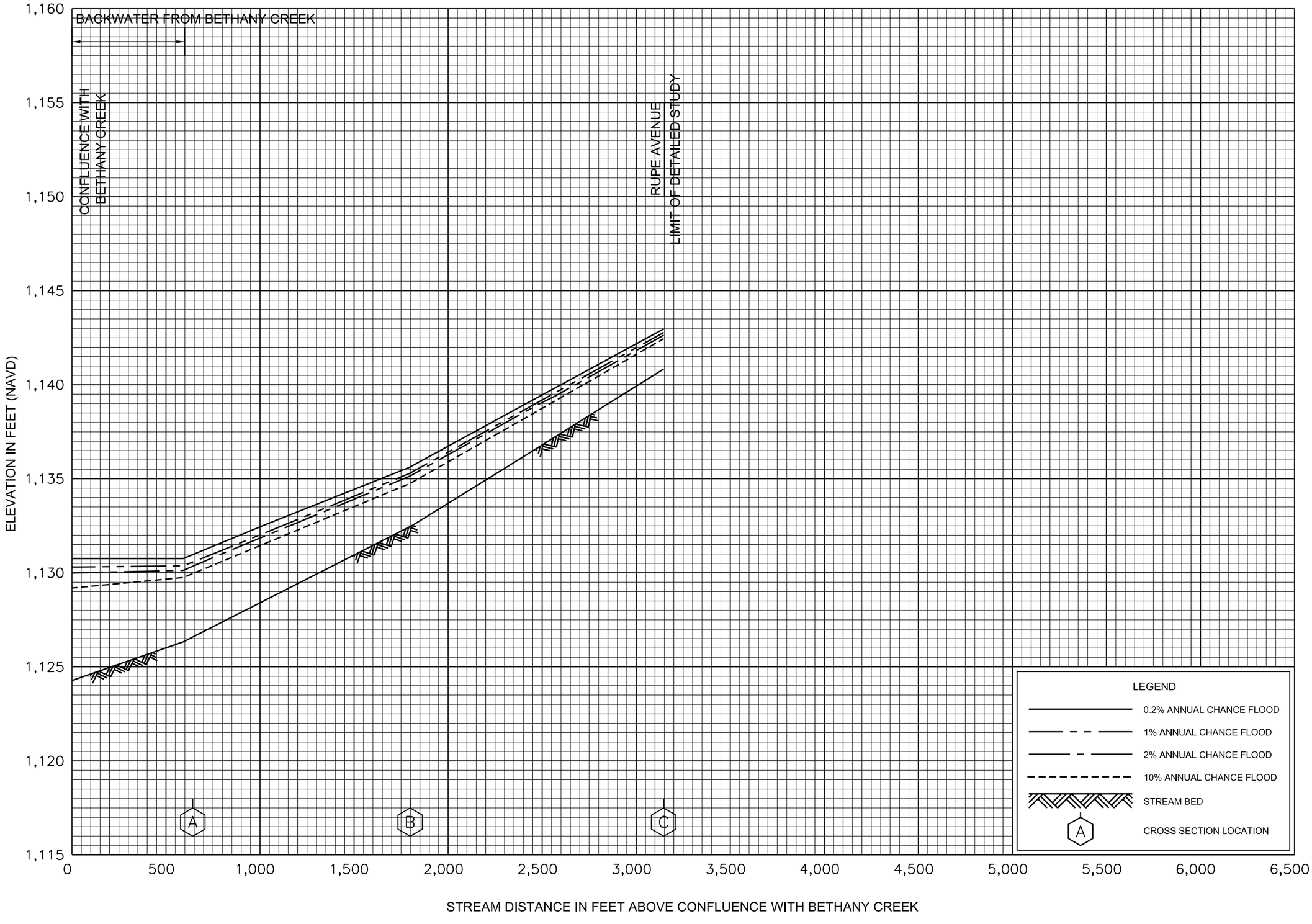
FLOOD PROFILES

NORTH BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

36P



FLOOD PROFILES

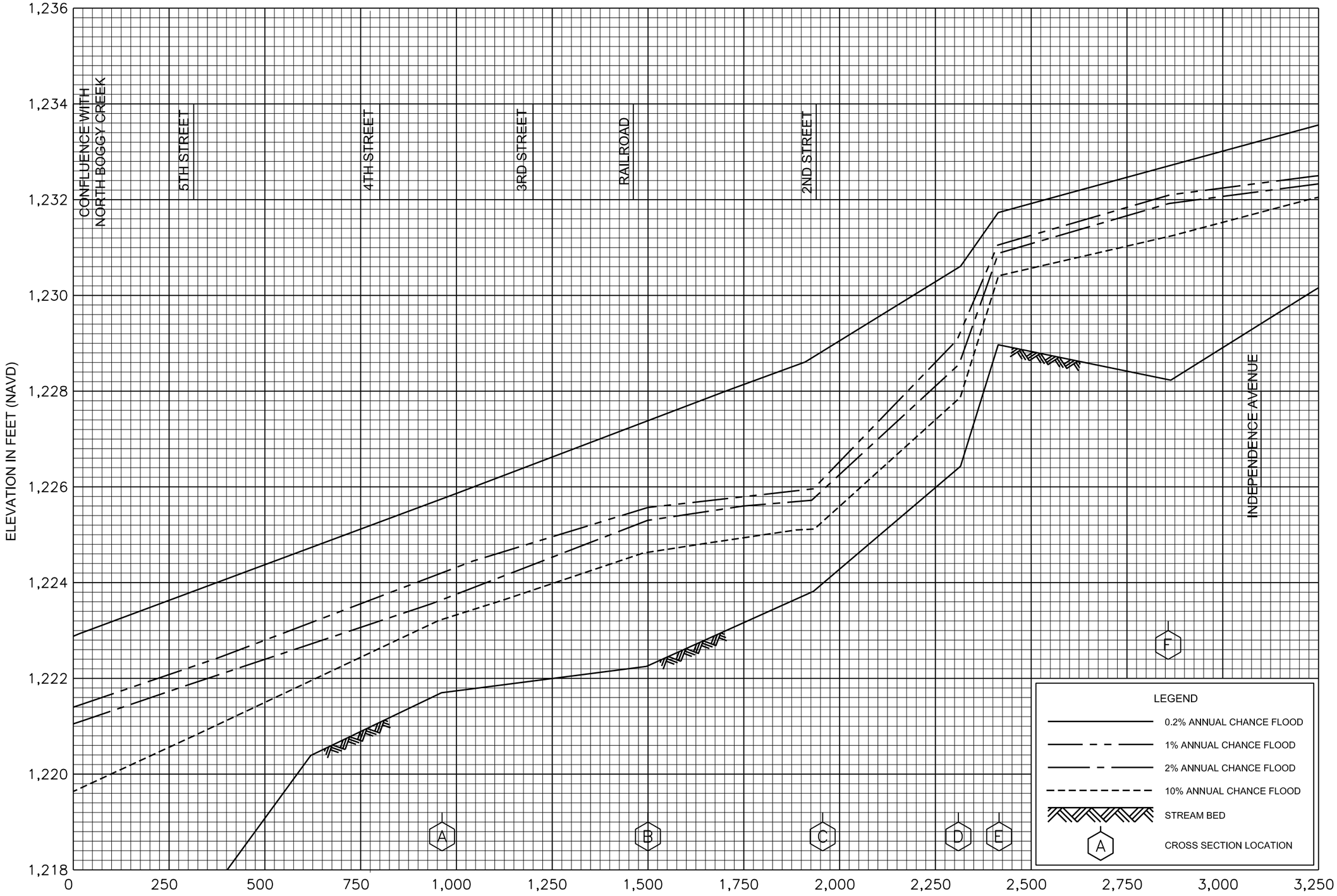
NORTH CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

37P



FLOOD PROFILES

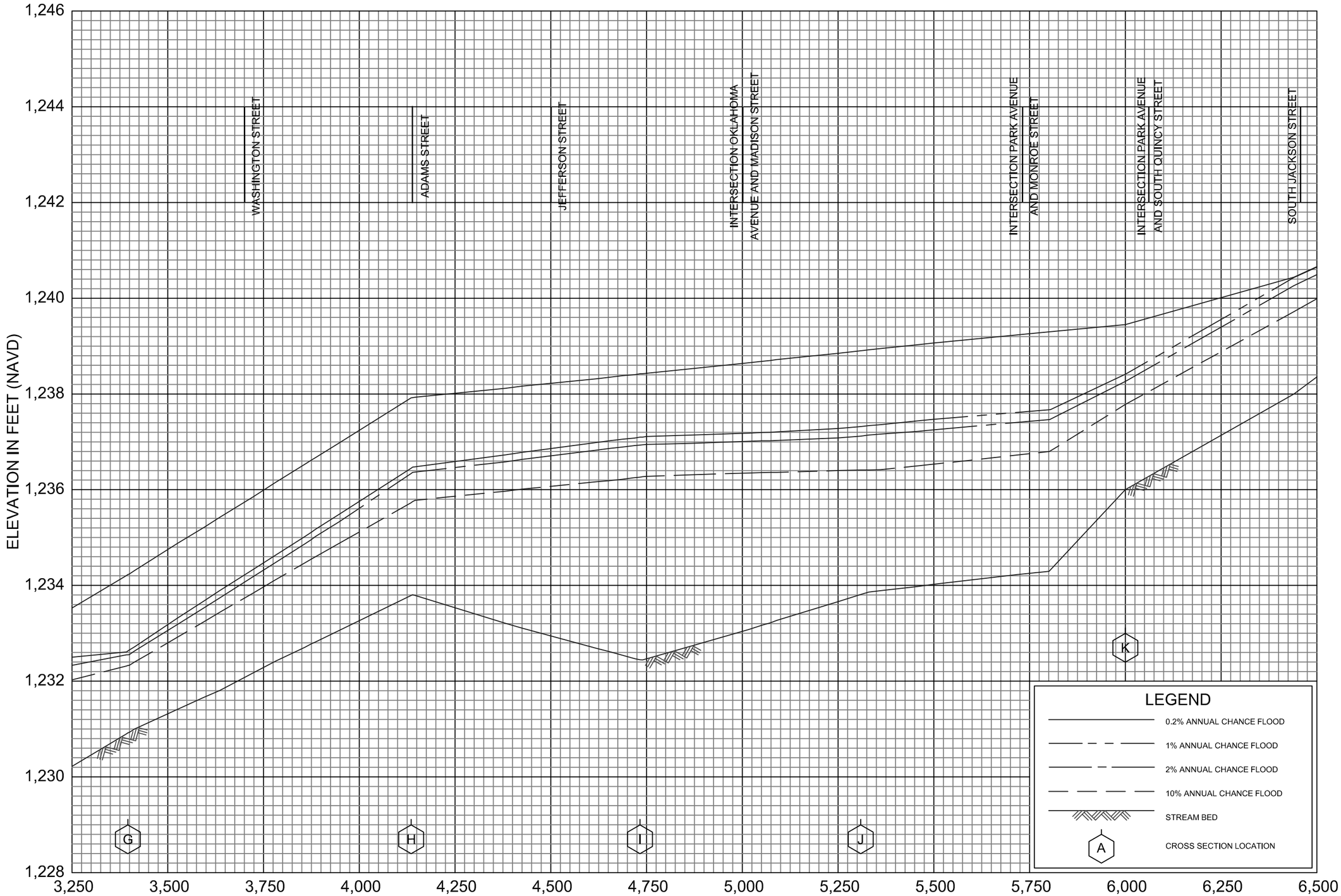
OLD CHANNEL BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

38P



FLOOD PROFILES

OLD CHANNEL BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORRPORATED AREAS

39P

FLOOD PROFILES

OLD CHANNEL BOGGY CREEK

ELEVATION IN FEET (NAVD)

1,248
1,246
1,244
1,242
1,240
1,238
1,236
1,234
1,232
1,230

INTERSECTION OWEN K. GARRIOTT ROAD AND VAN BUREN STREET

INTERSECTION OWEN K. GARRIOTT ROAD AND SOUTH TYLER STREET

POLK STREET

TAYLOR STREET

L M N O P Q

LEGEND

- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- A — CROSS SECTION LOCATION

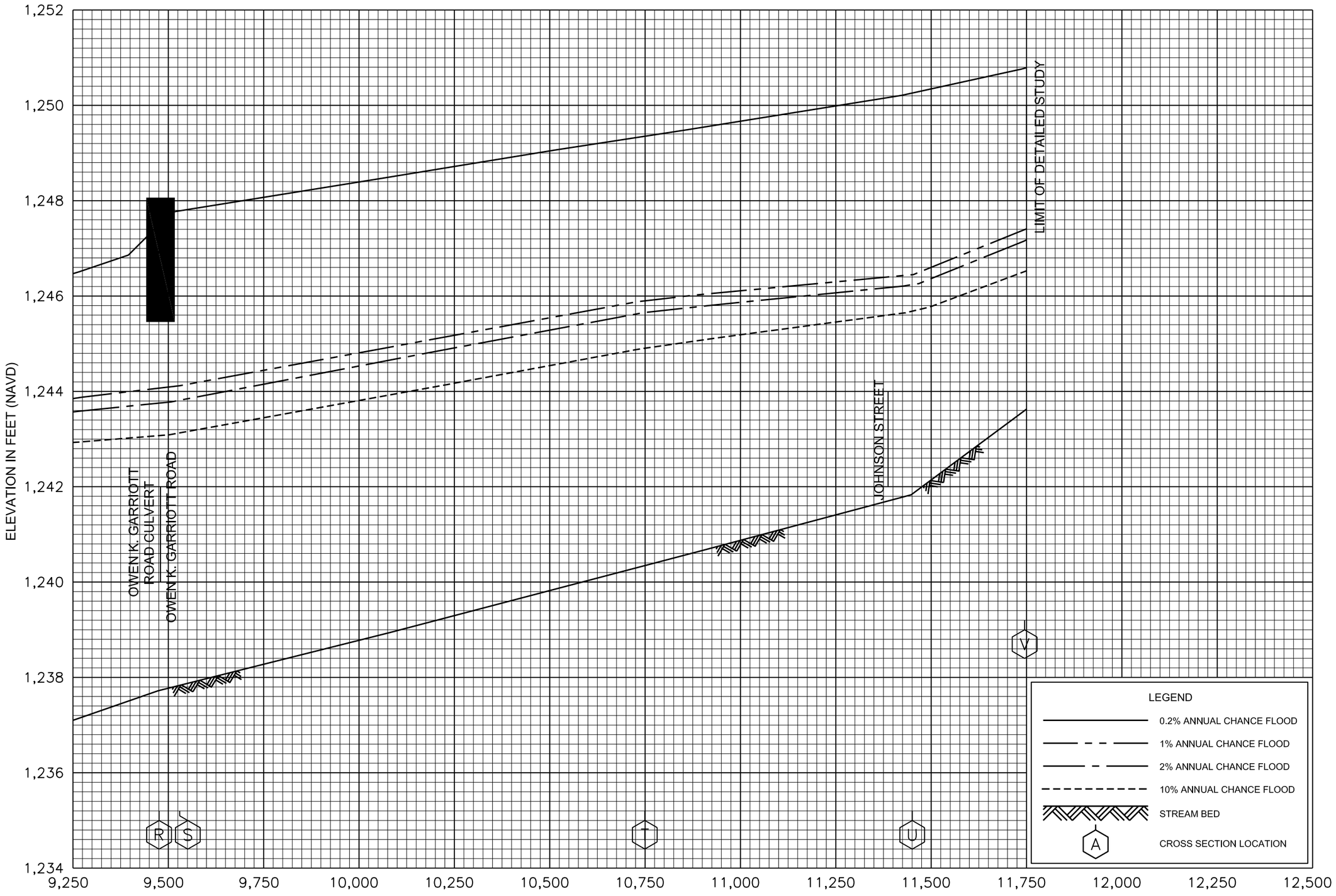
6,500 6,750 7,000 7,250 7,500 7,750 8,000 8,250 8,500 8,750 9,000 9,250 9,500 9,750

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH NORTH BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORRPORATED AREAS

40P



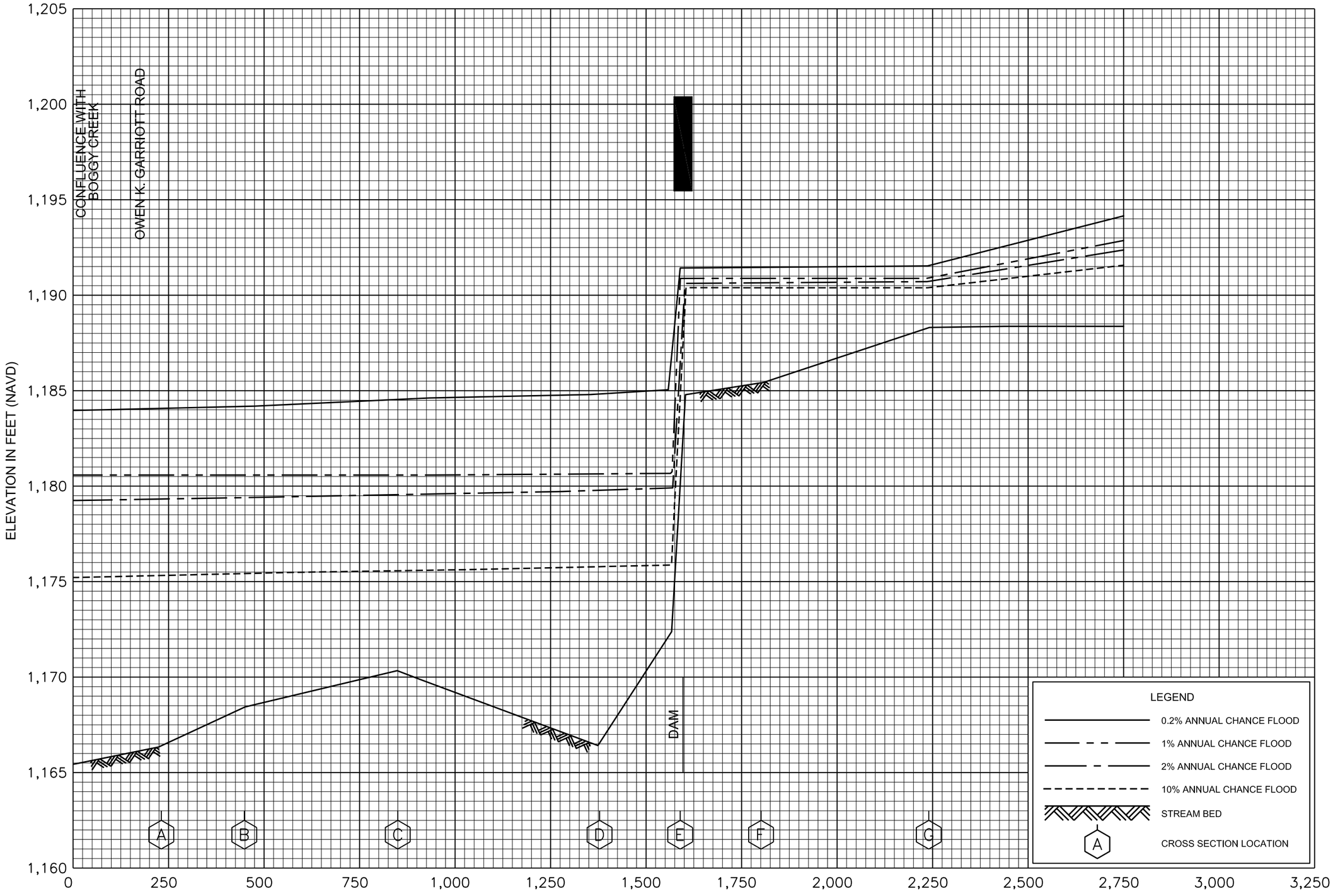
FLOOD PROFILES

OLD CHANNEL BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

41P



FLOOD PROFILES

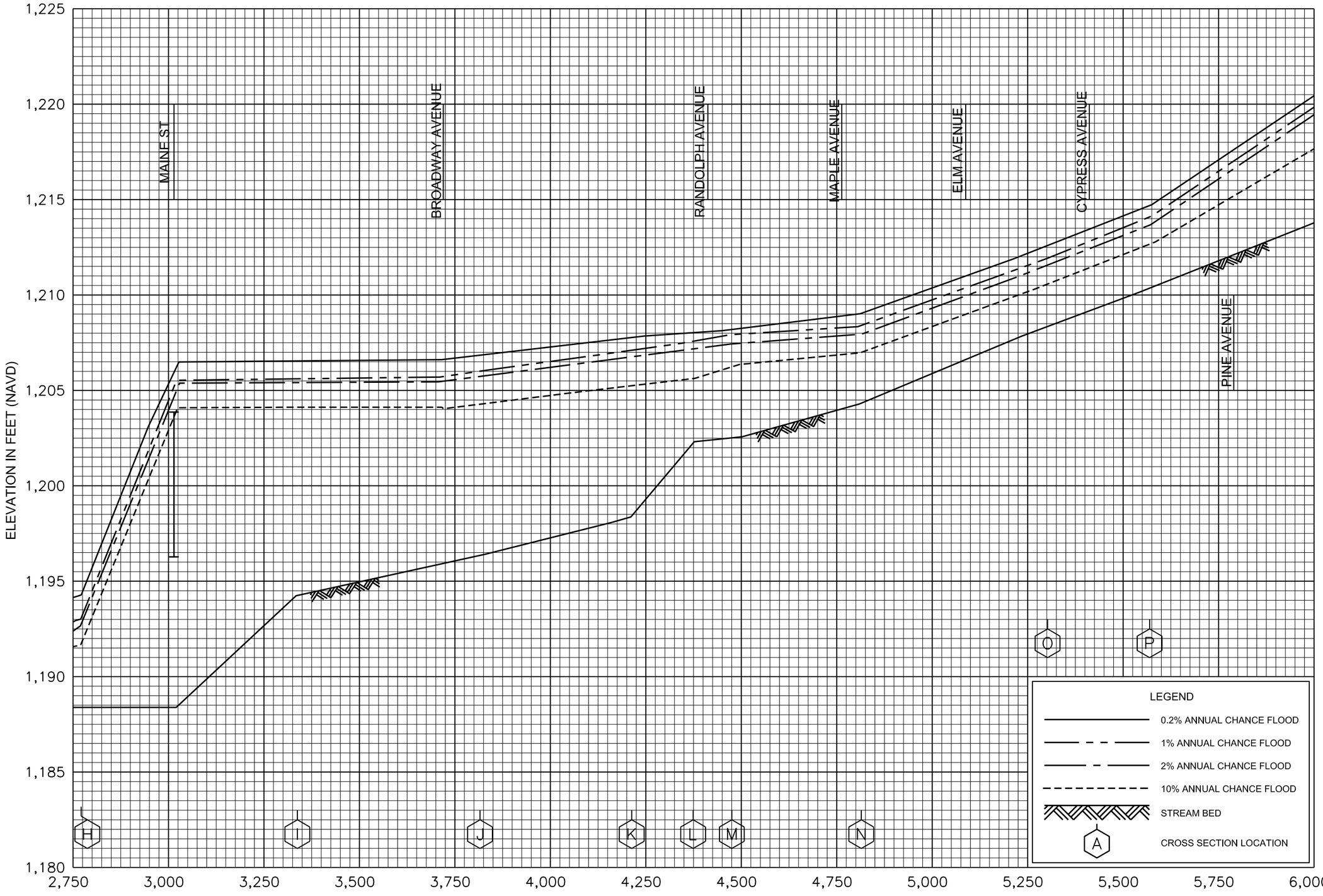
PHILLIPS UNIVERSITY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

42P



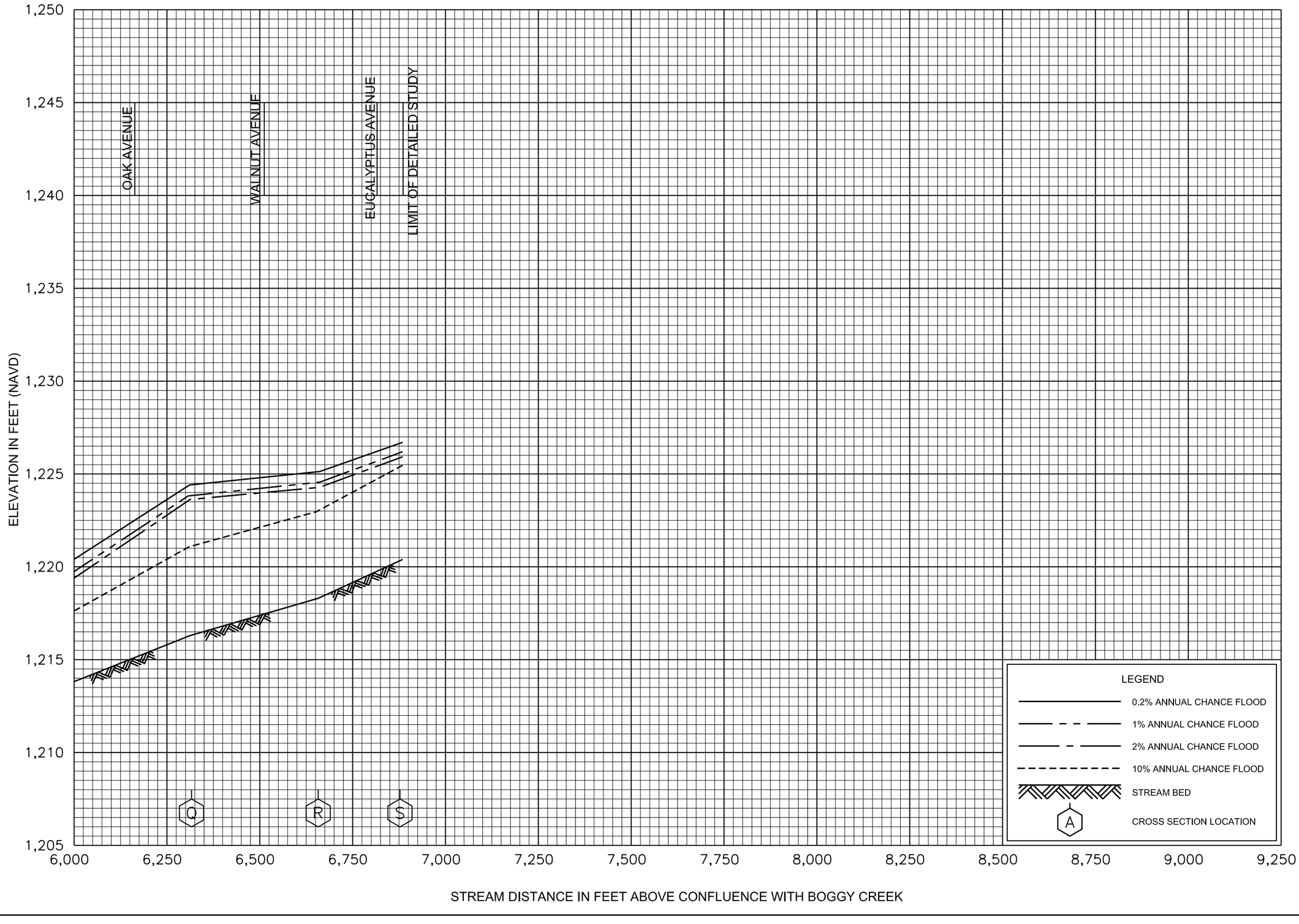
FLOOD PROFILES

PHILLIPS UNIVERSITY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

43P

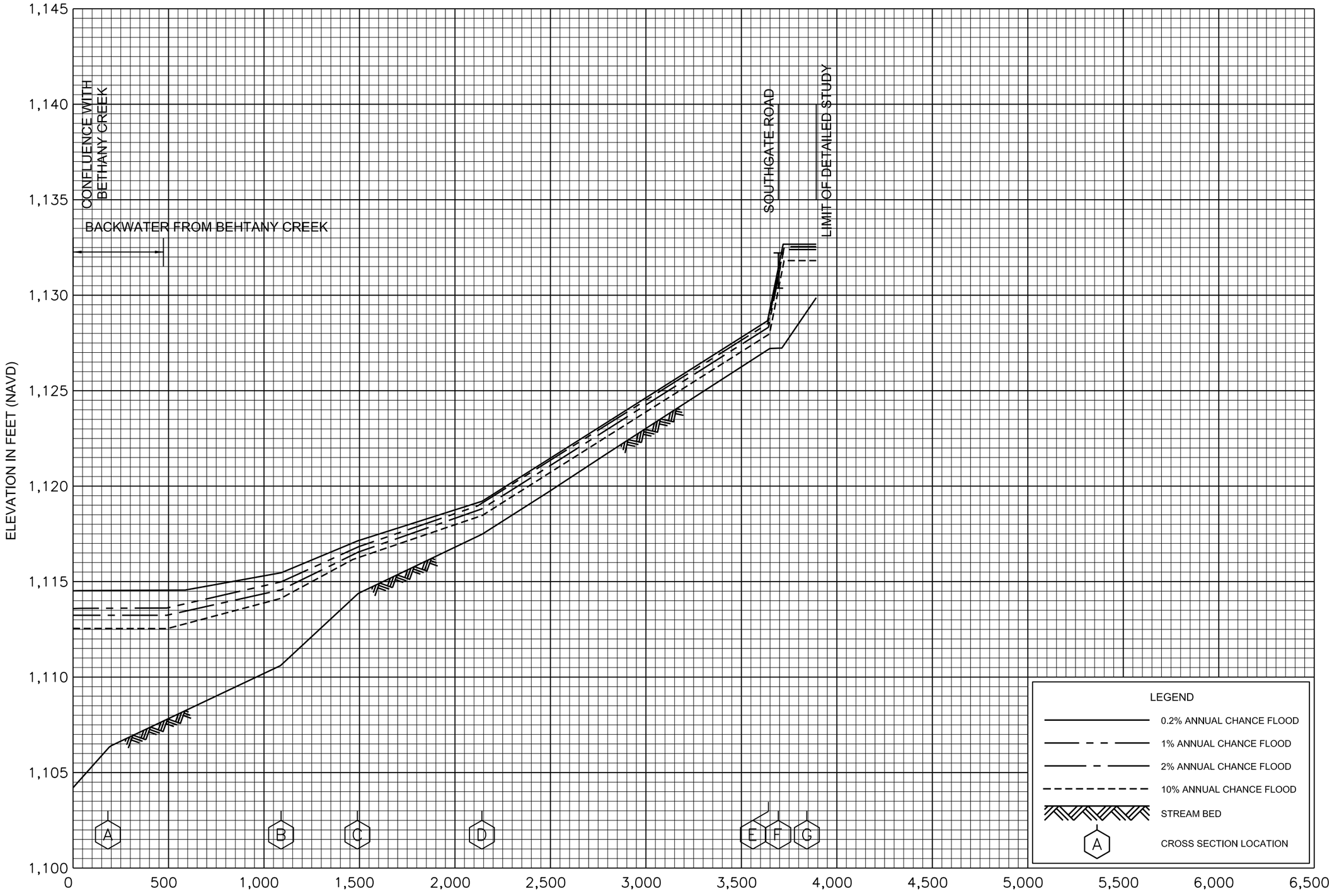


FLOOD PROFILES

PHILLIPS UNIVERSITY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



FLOOD PROFILES

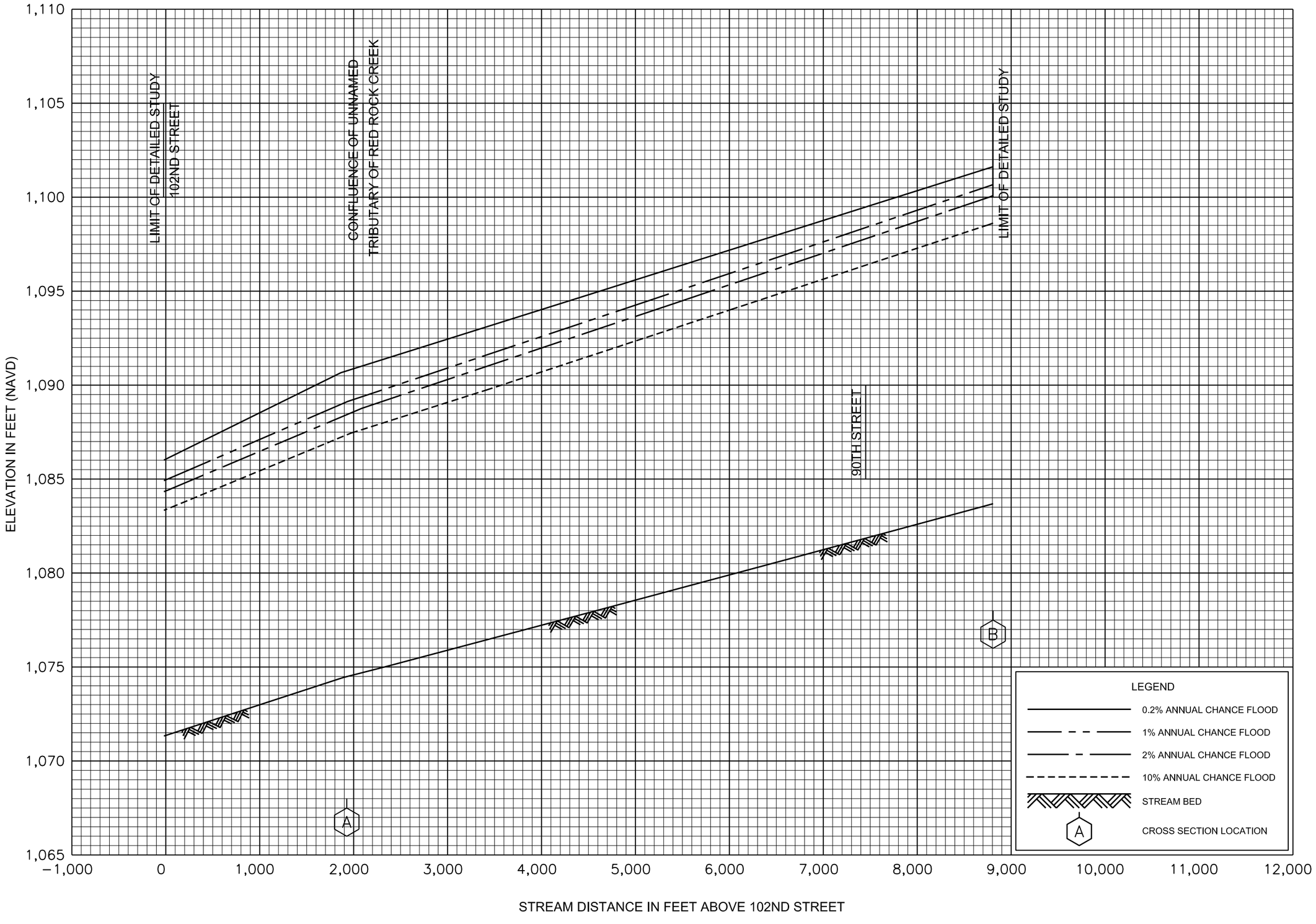
PLEASANTDALE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

45P

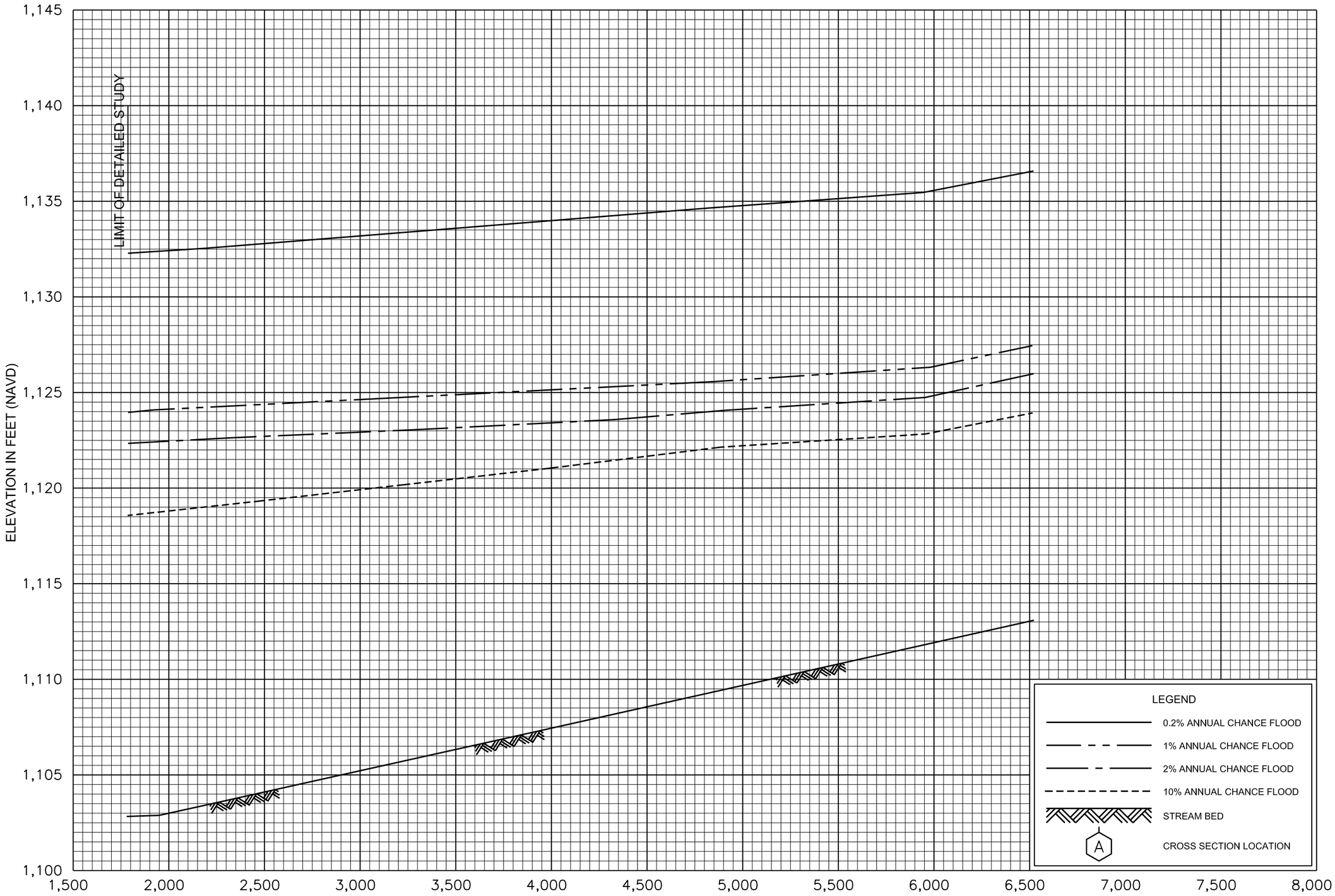


FLOOD PROFILES

RED ROCK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



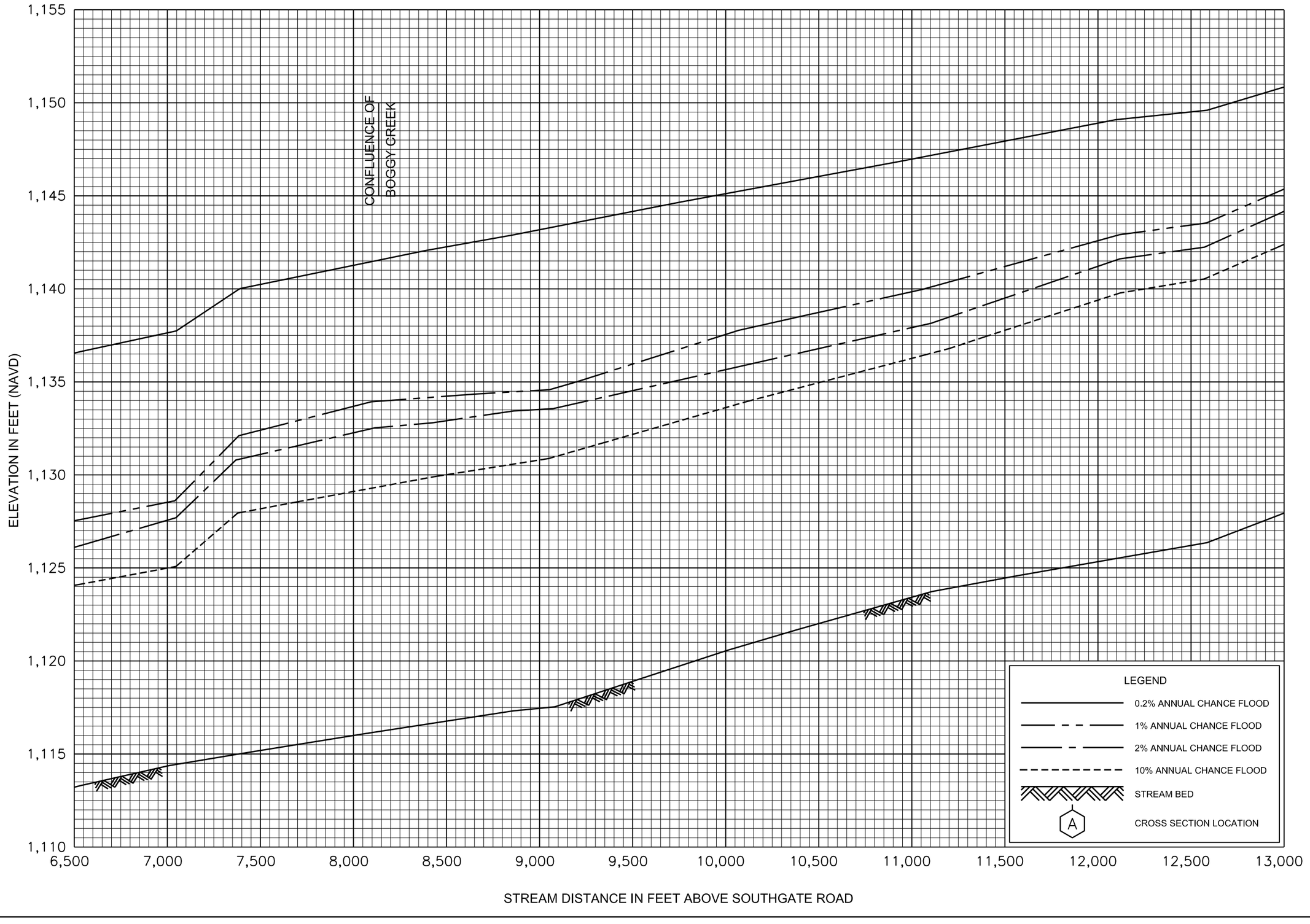
FLOOD PROFILES

SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

47P



FLOOD PROFILES

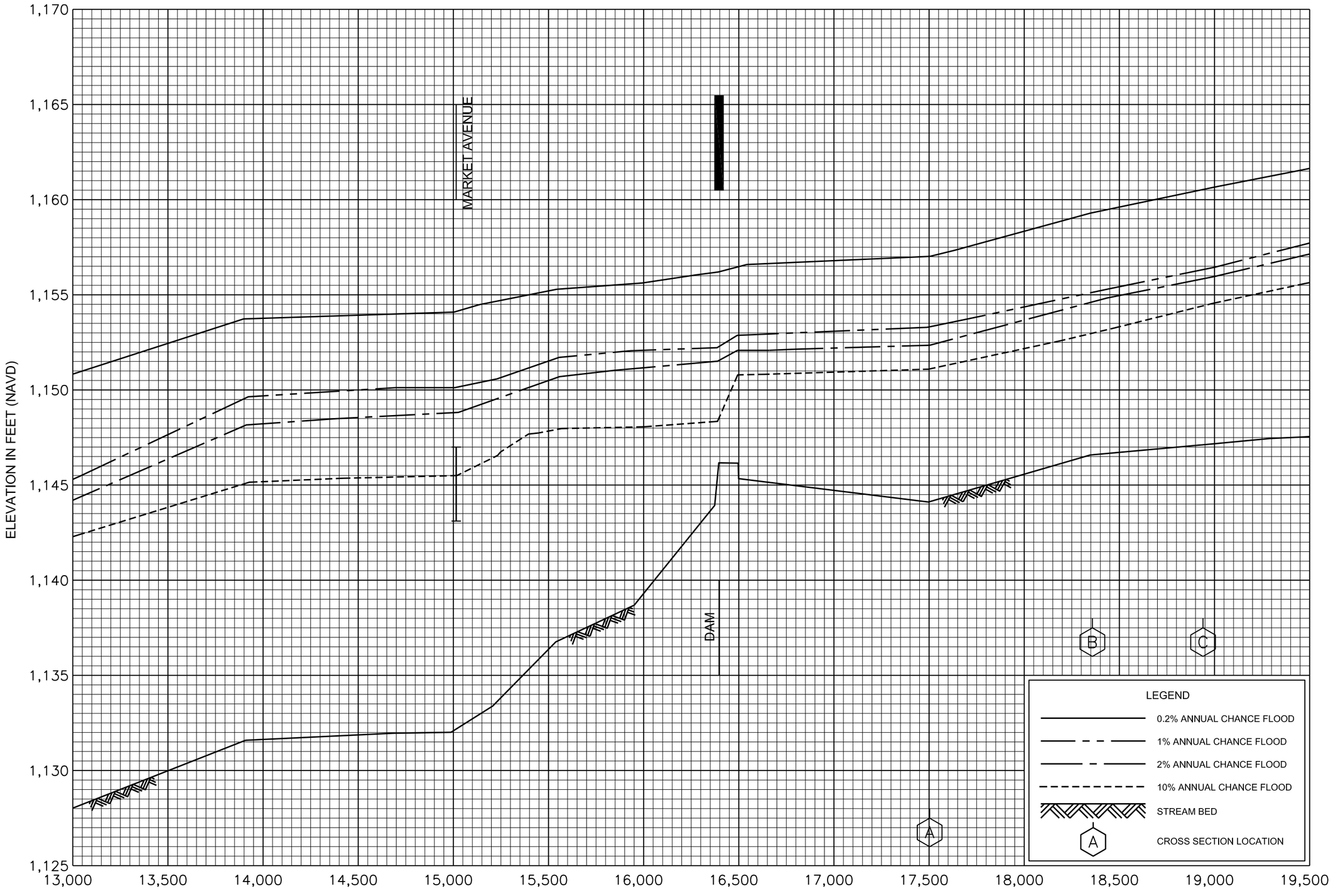
SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

48P

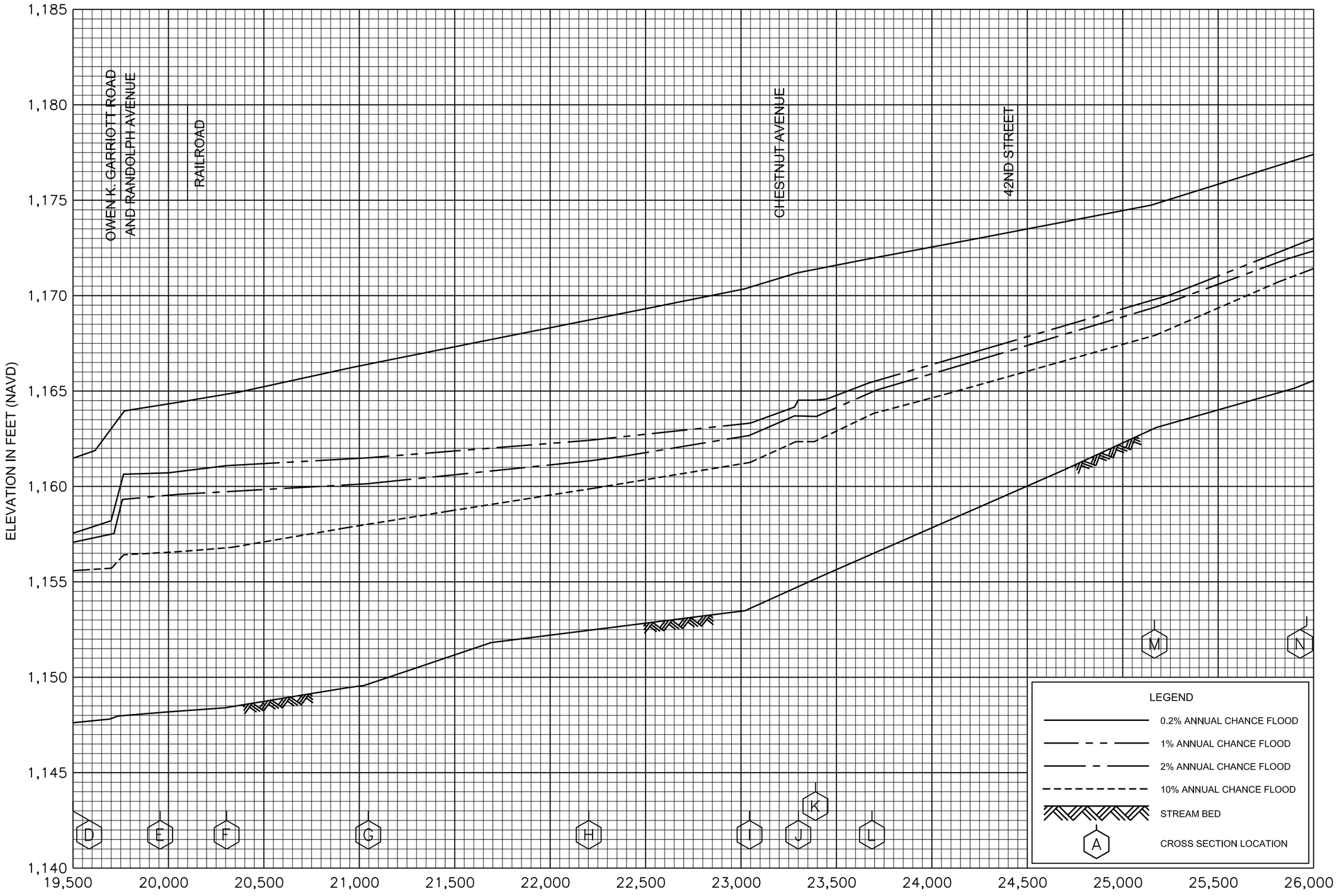


FLOOD PROFILES

SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

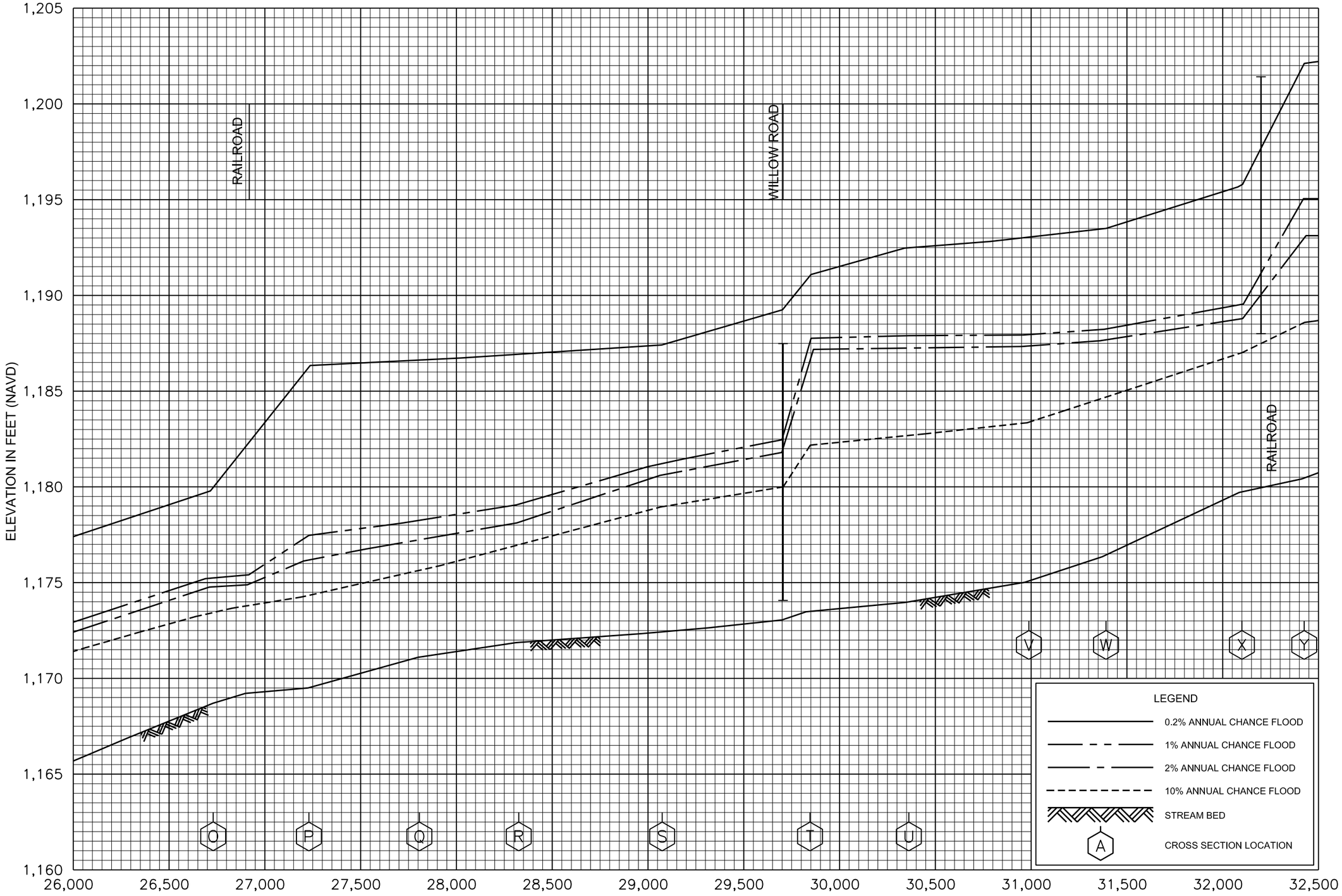


FLOOD PROFILES

SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



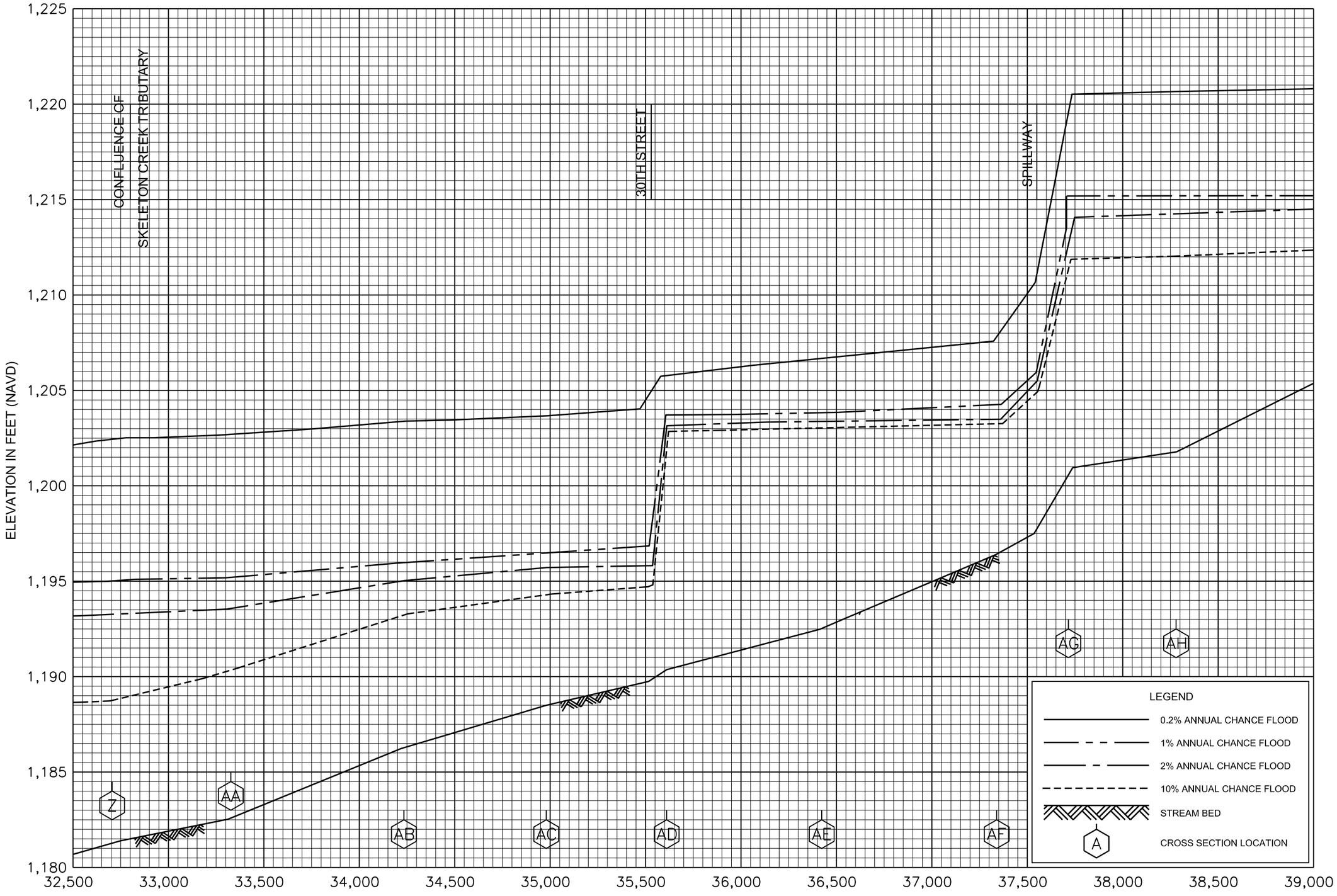
FLOOD PROFILES

SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



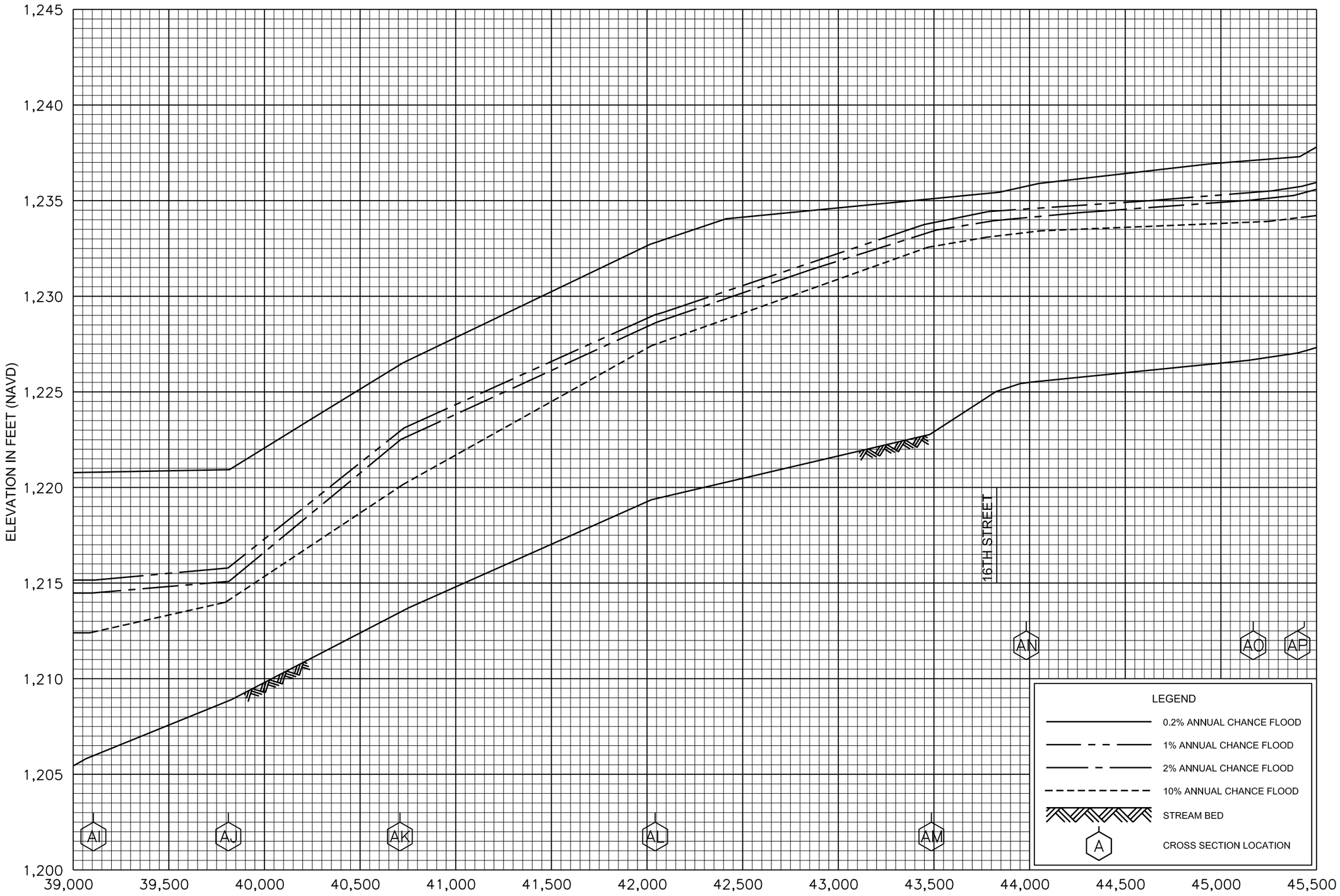
FLOOD PROFILES

SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



FLOOD PROFILES

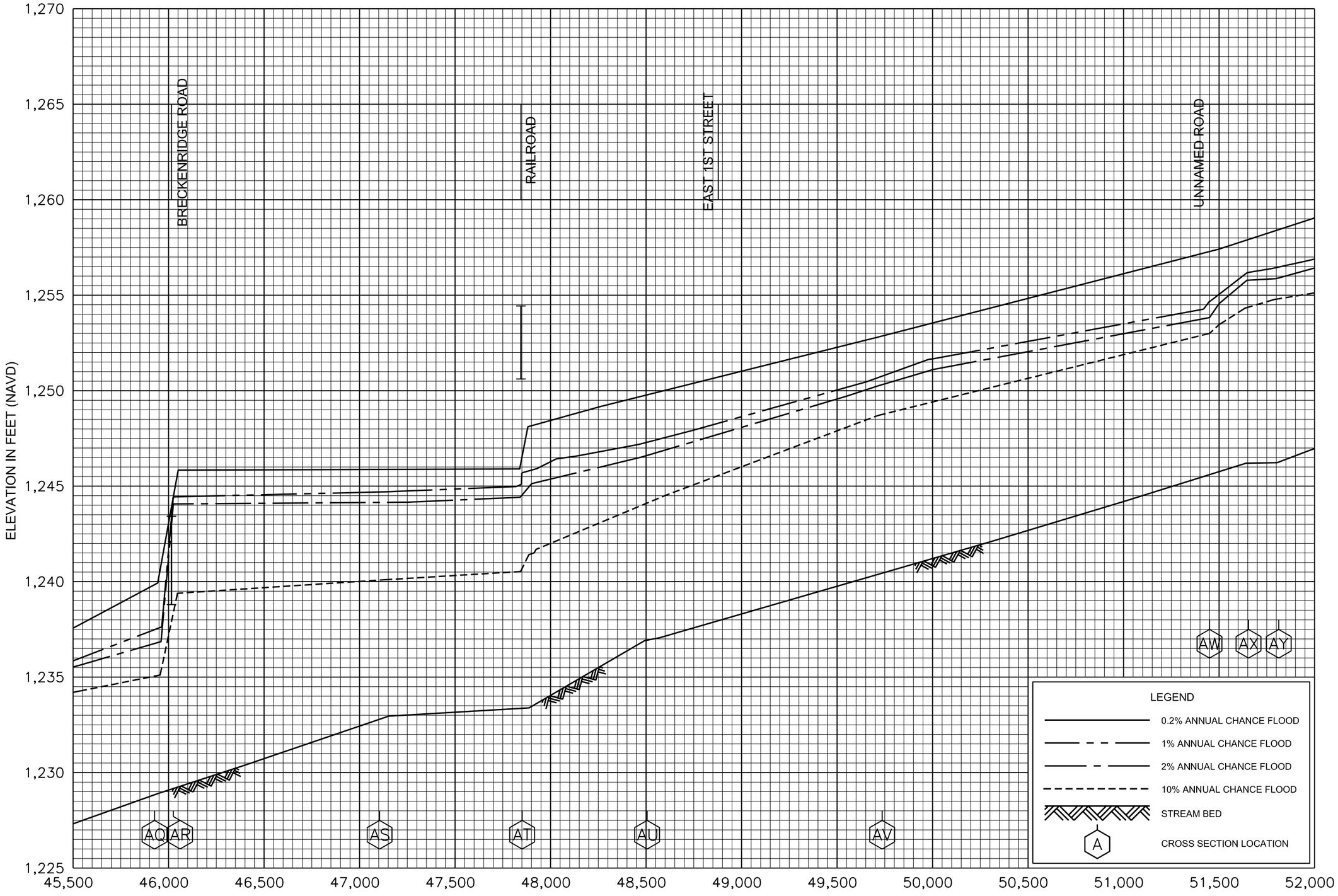
SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

53P



FLOOD PROFILES

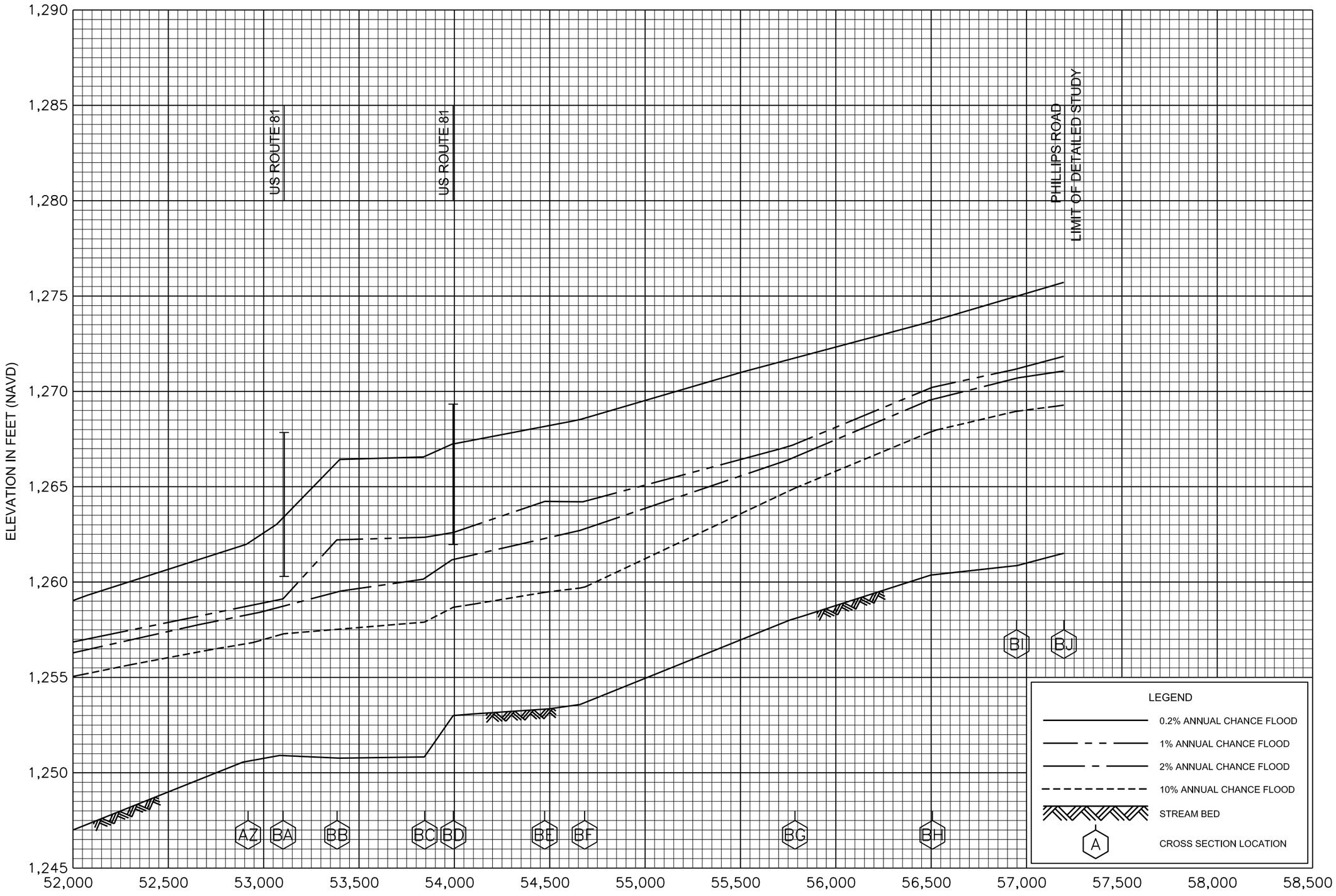
SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

54P



FLOOD PROFILES

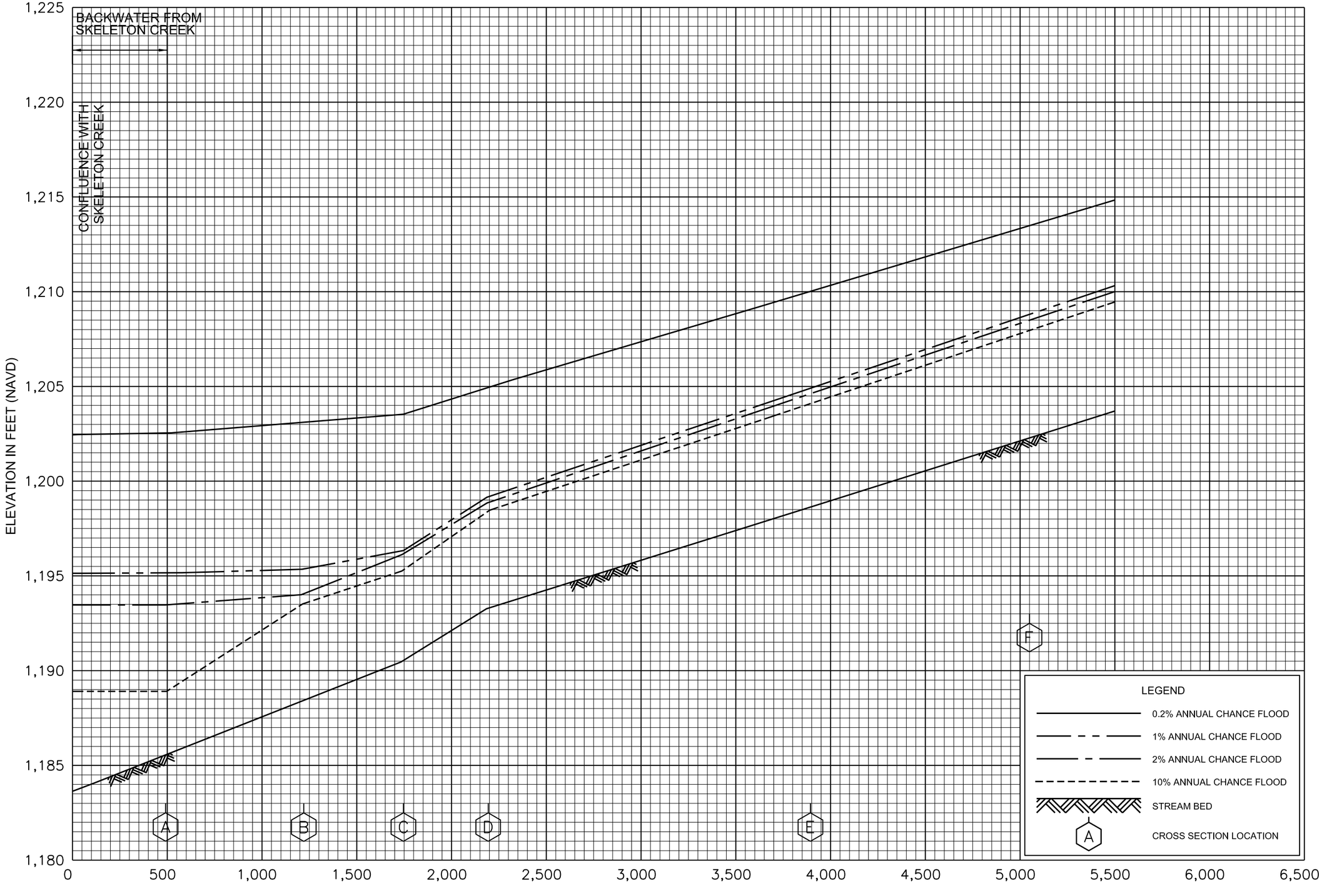
SKELETON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

55P

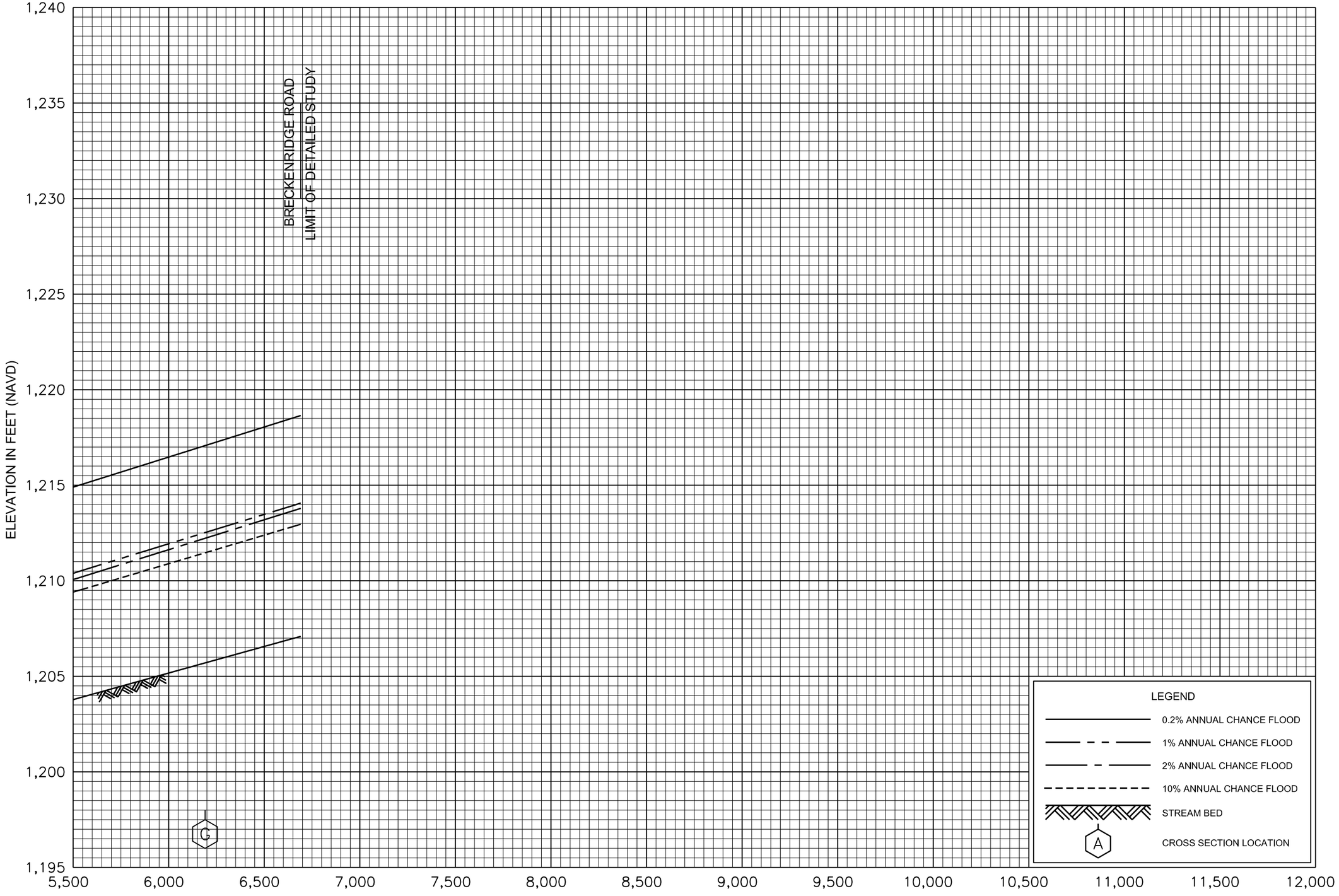


FLOOD PROFILES

SKELETON CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

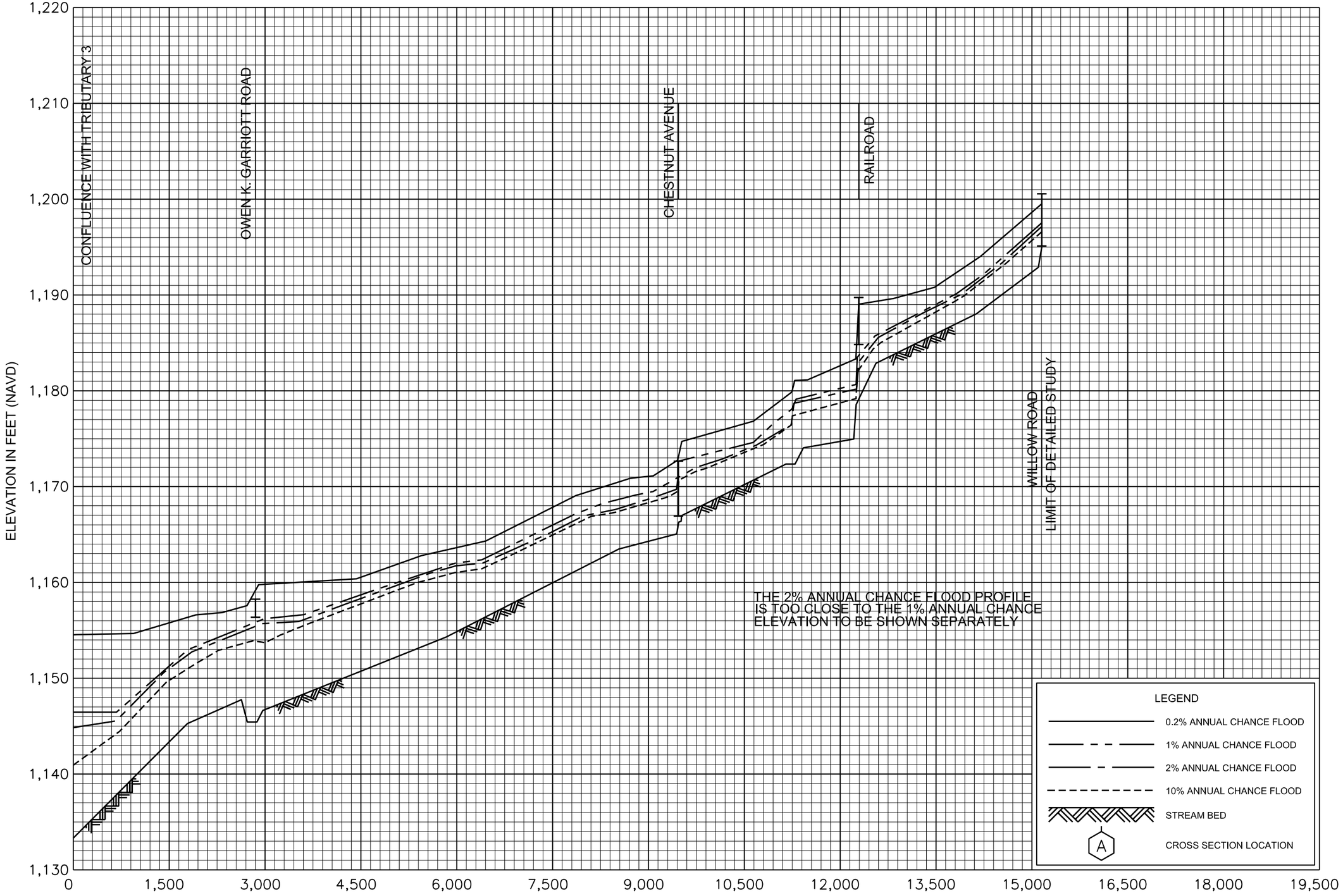


FLOOD PROFILES

SKELETON CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



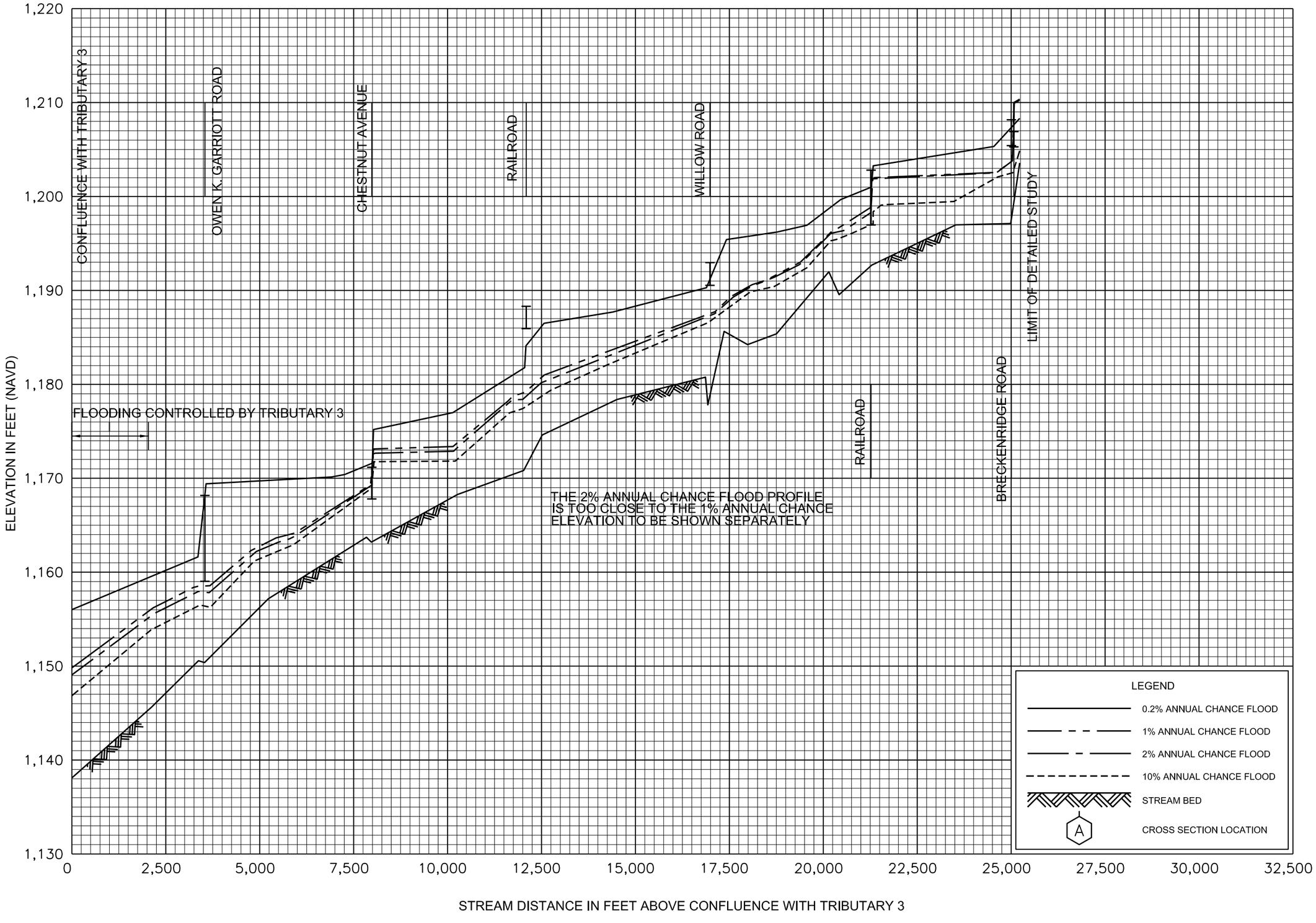
FLOOD PROFILES

TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



FLOOD PROFILES

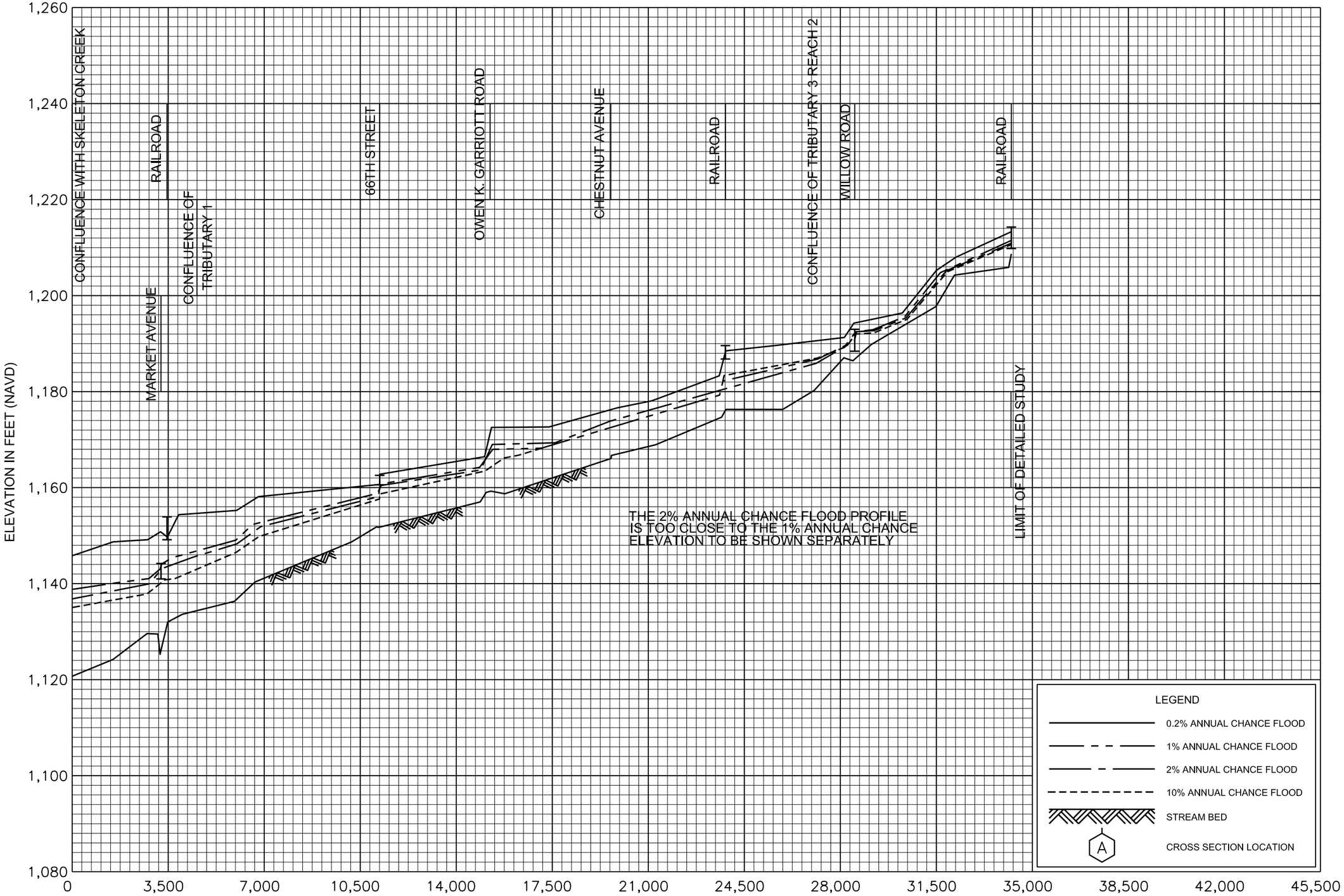
TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

59P



FLOOD PROFILES

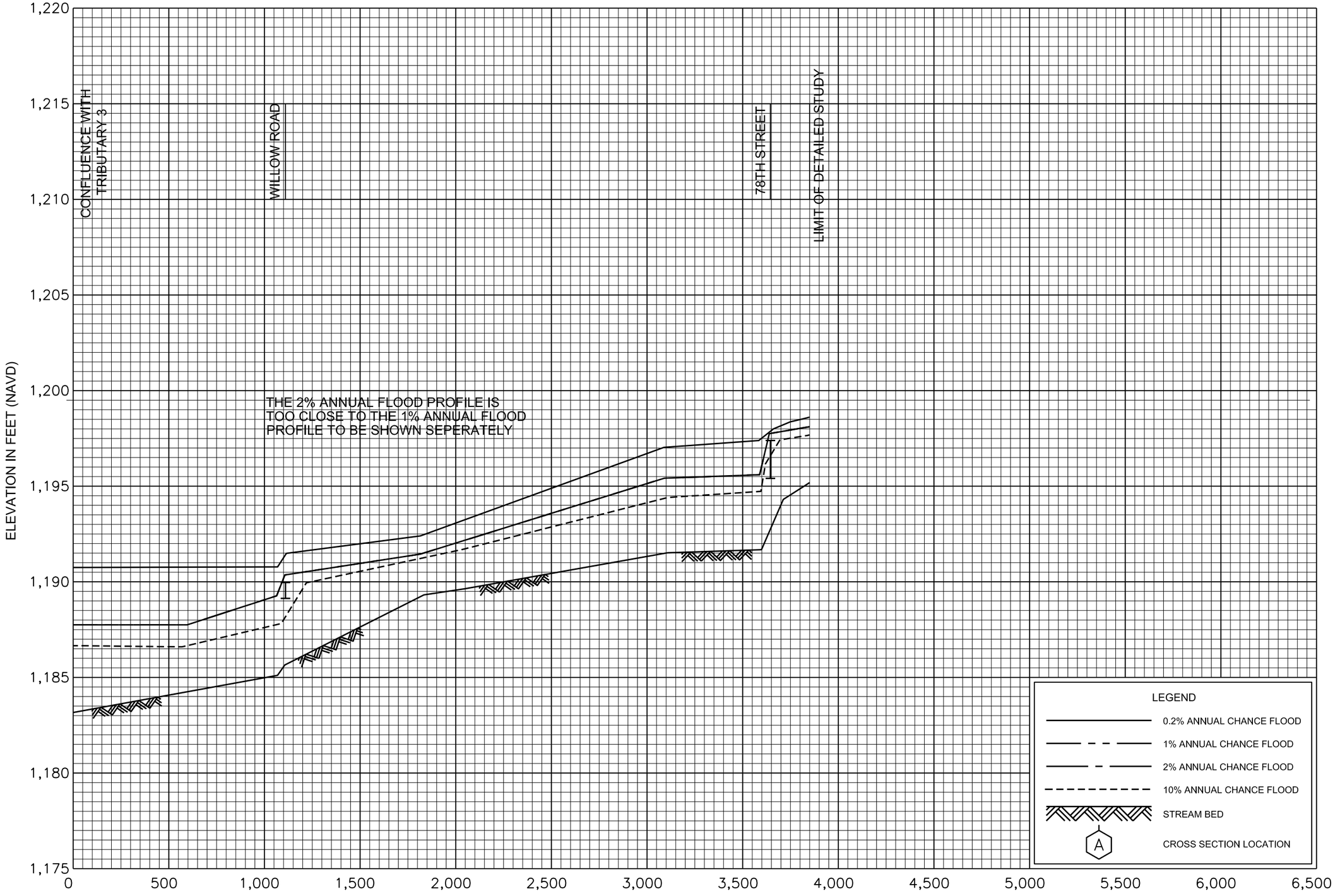
TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

60P

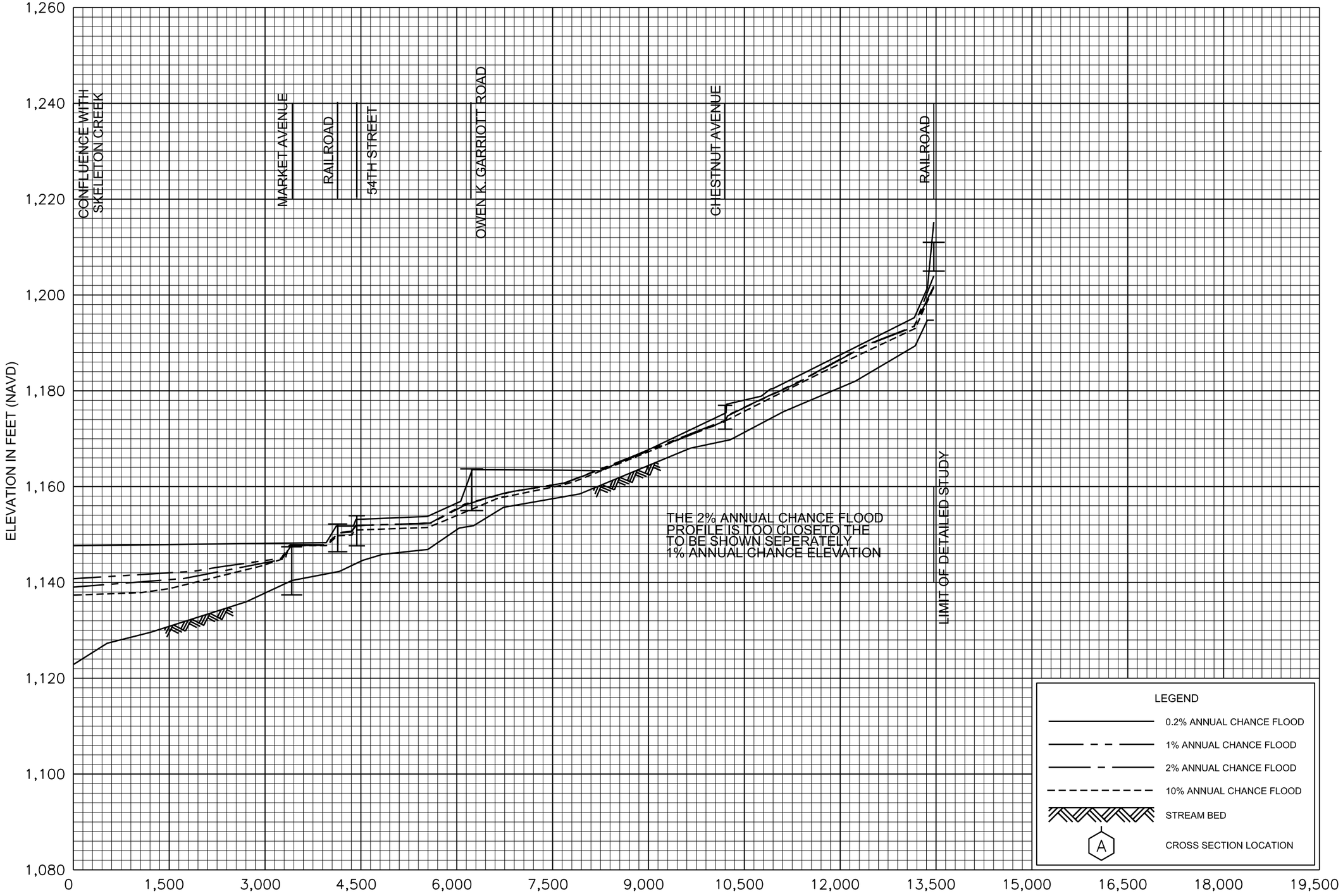


FLOOD PROFILES

TRIBUTARY 3 REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



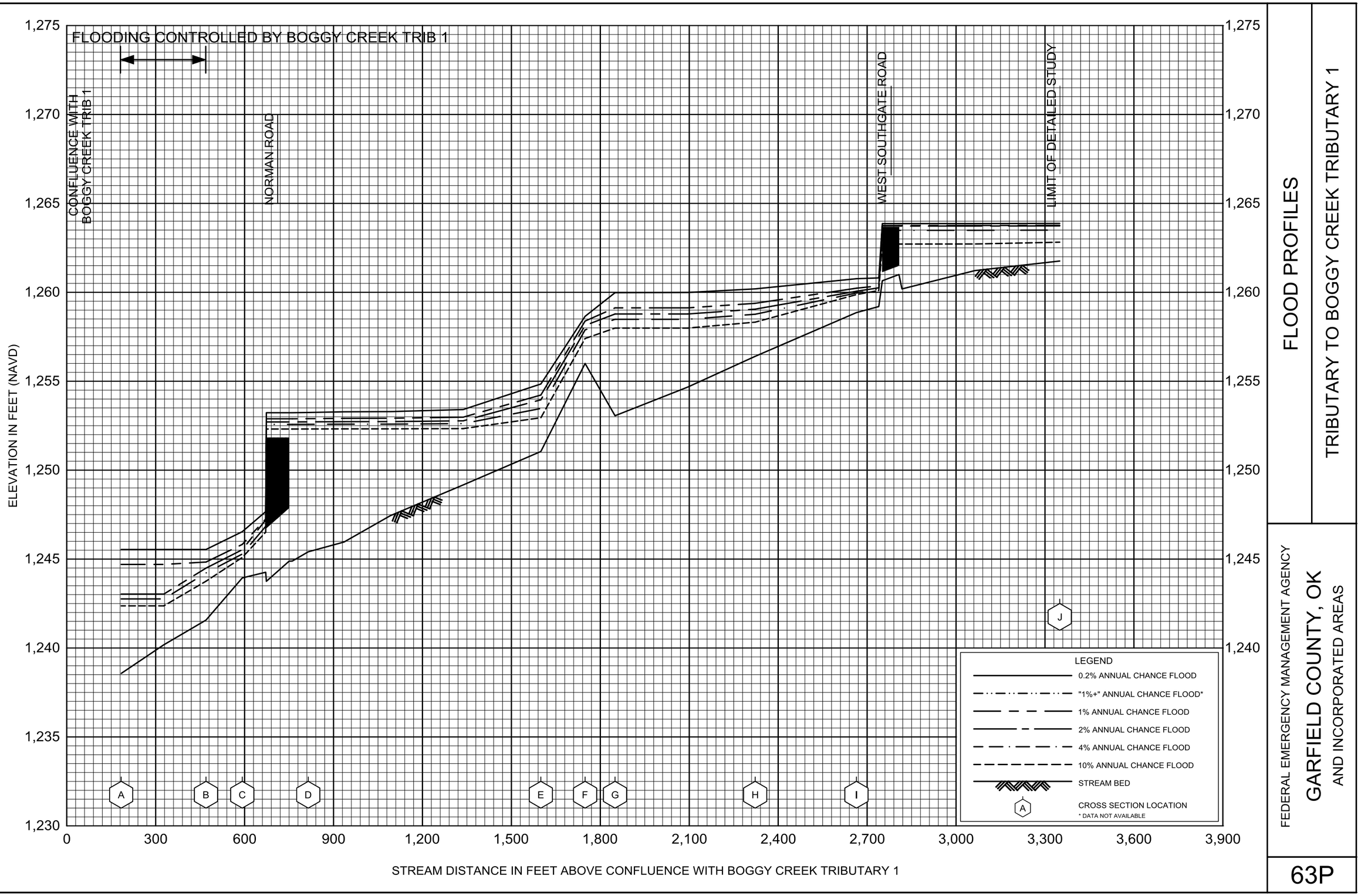
FLOOD PROFILES

TRIBUTARY 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

62P



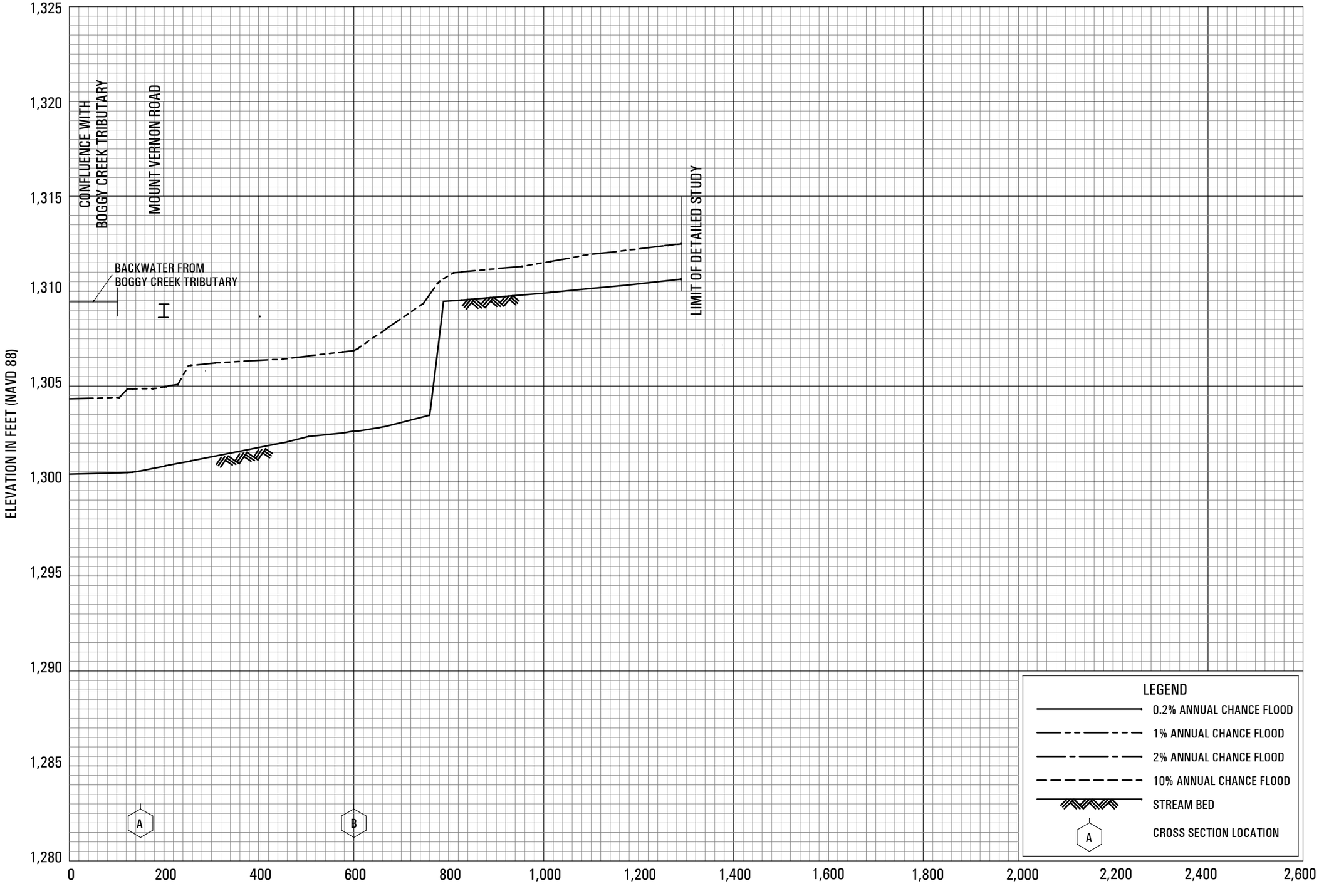
FLOOD PROFILES

BOGGY CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



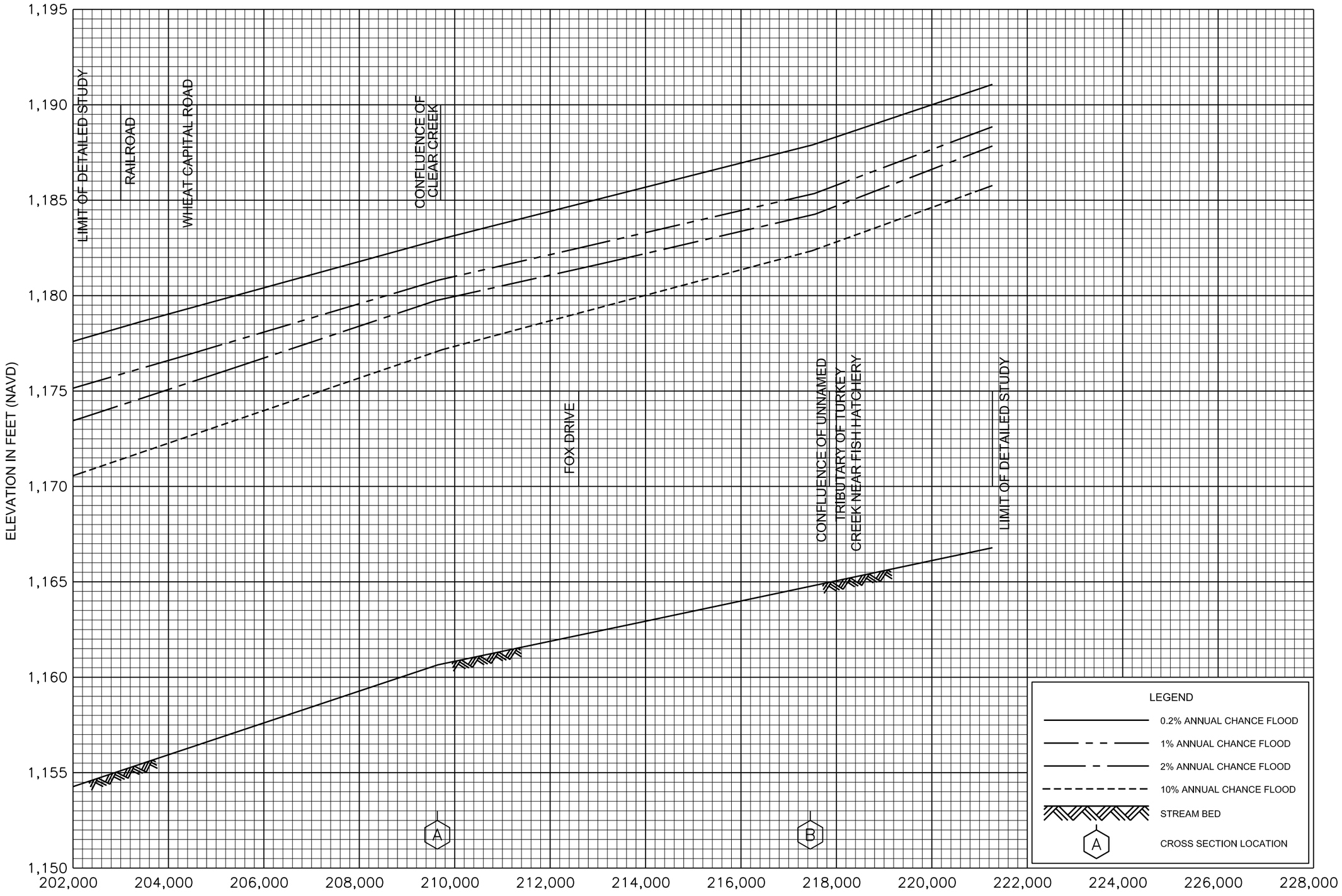
FLOOD PROFILES

TRIBUTARY A TO BOGGY CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS



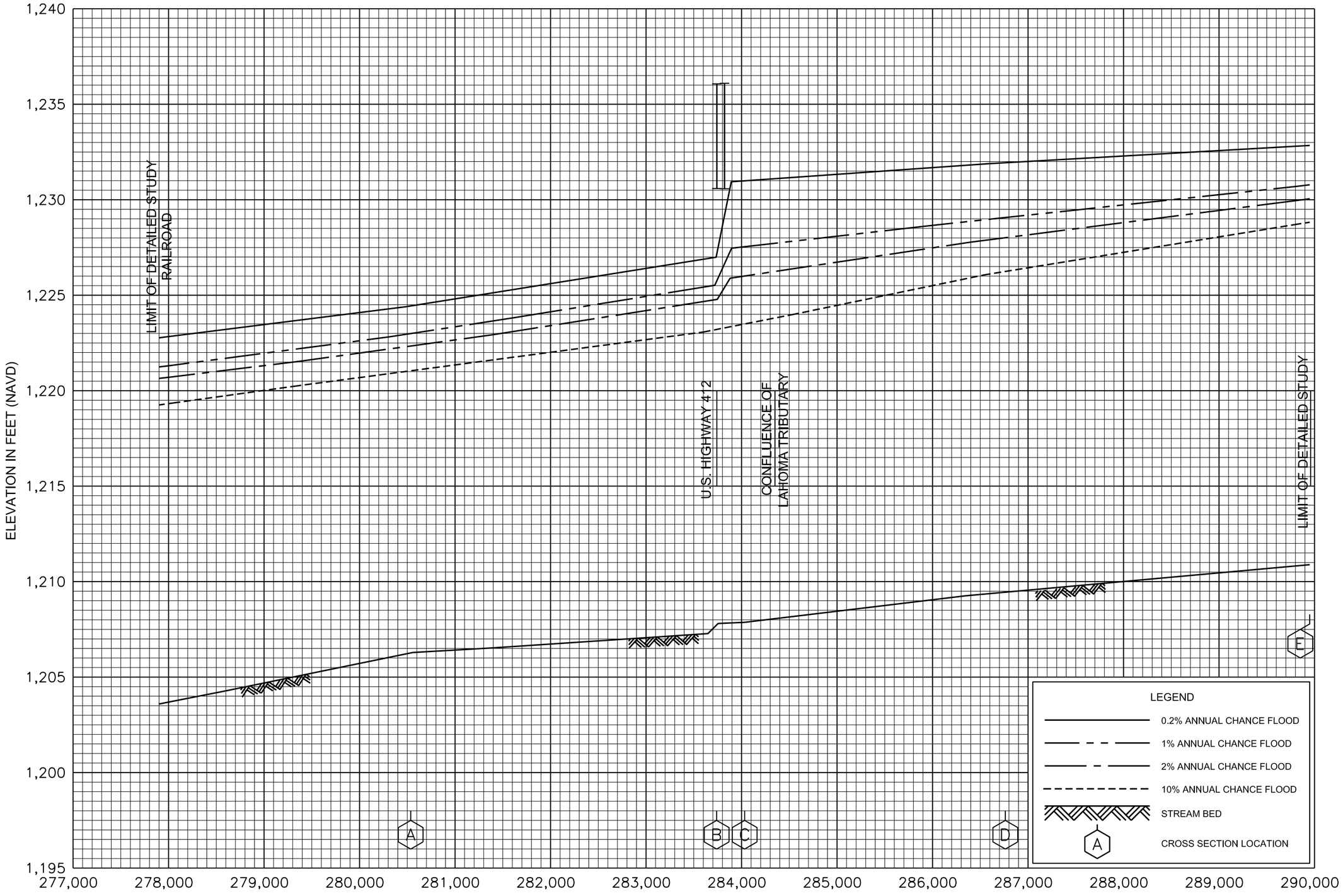
FLOOD PROFILES

TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

65P



FLOOD PROFILES

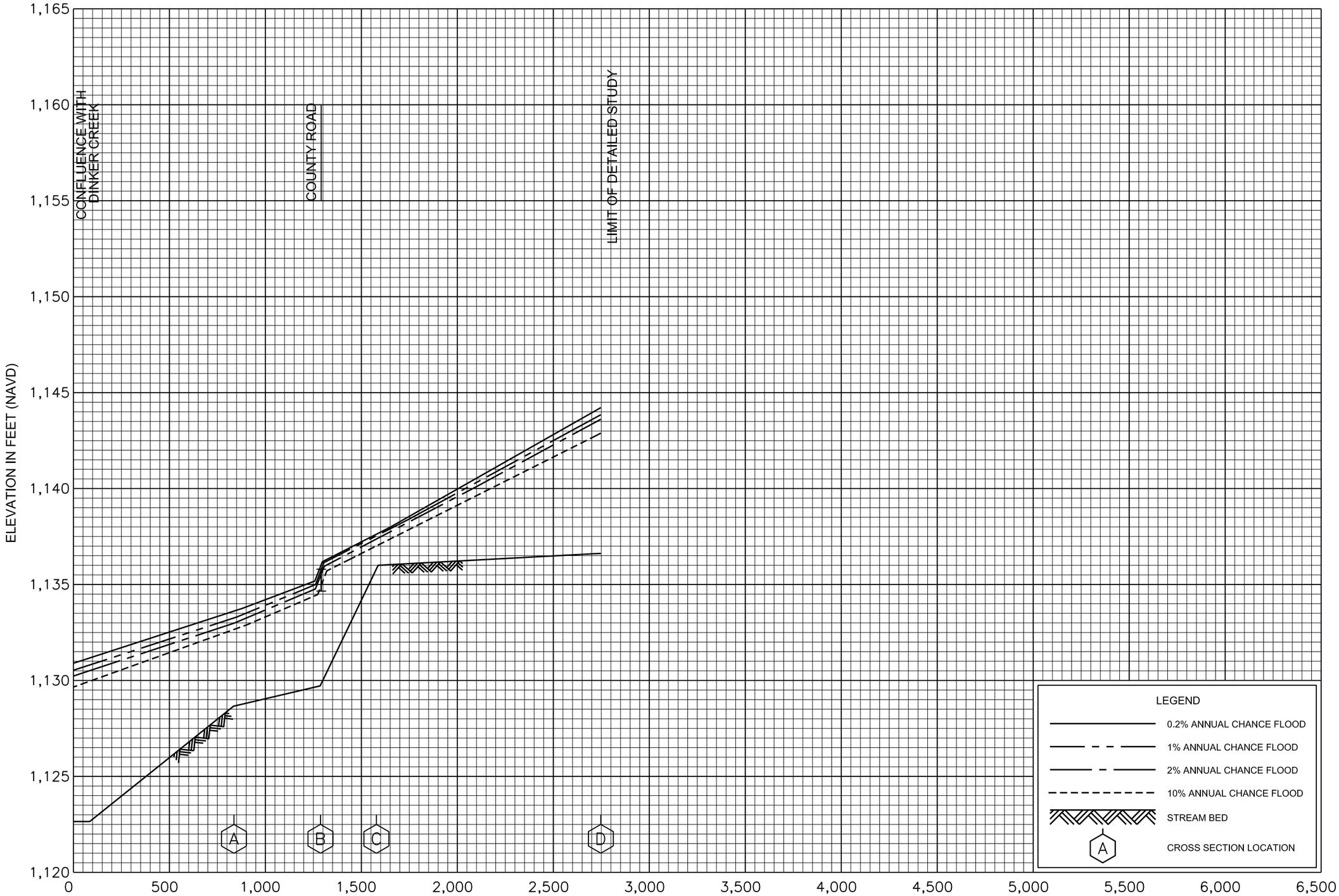
TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

66P

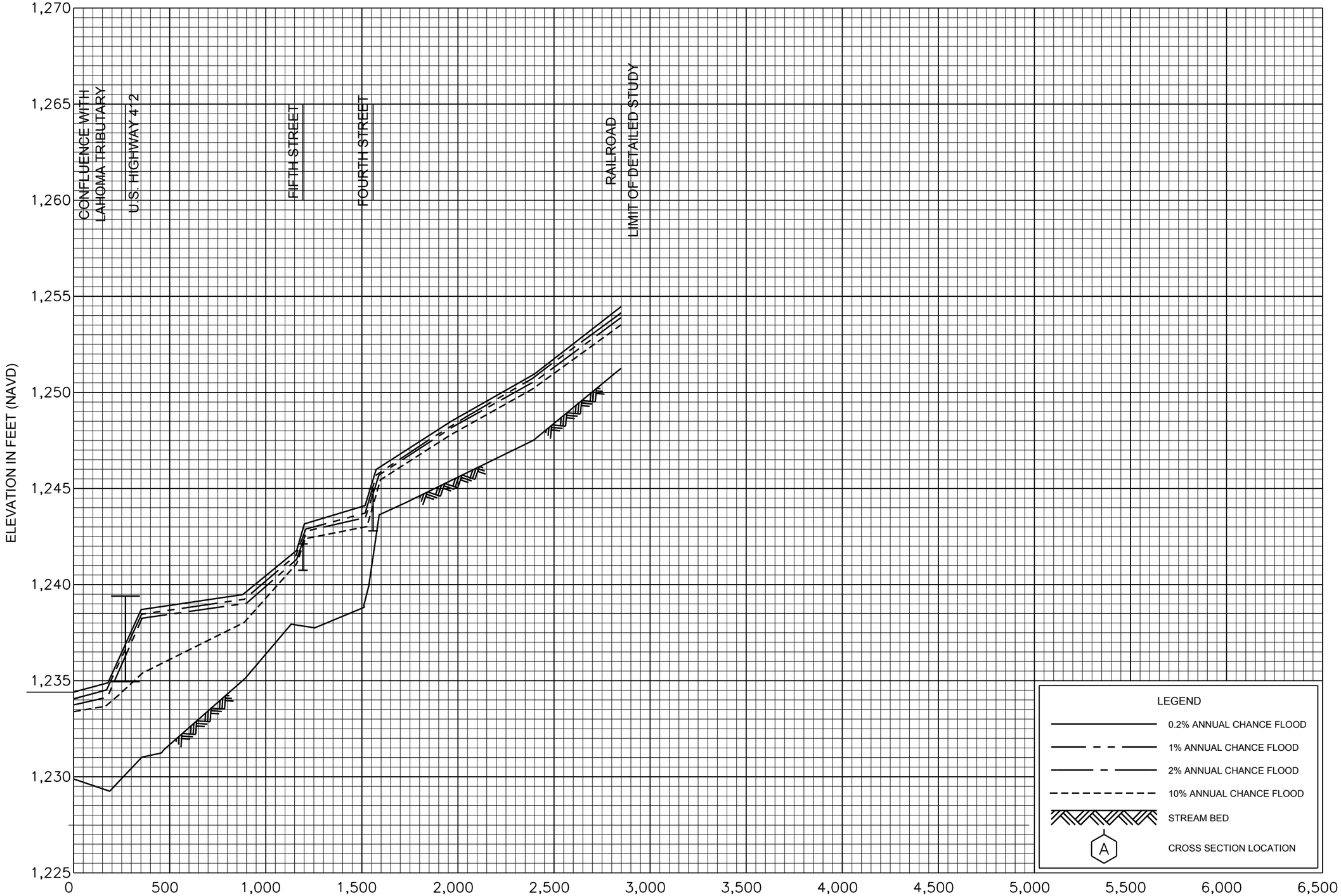


FLOOD PROFILES

UNNAMED TRIBUTARY OF DINKER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS



FLOOD PROFILES

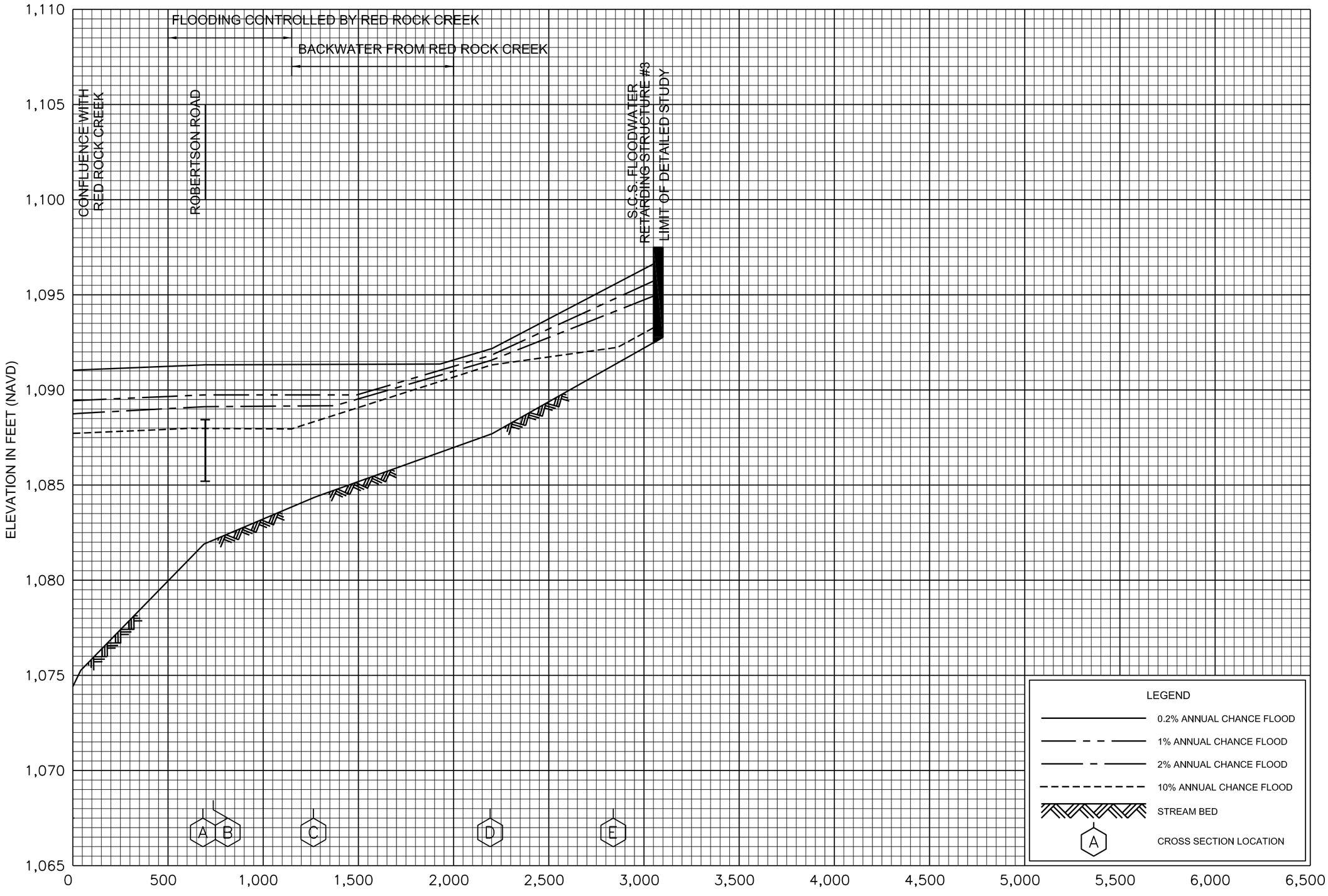
UNNAMED TRIBUTARY OF LAHOMA TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

68P



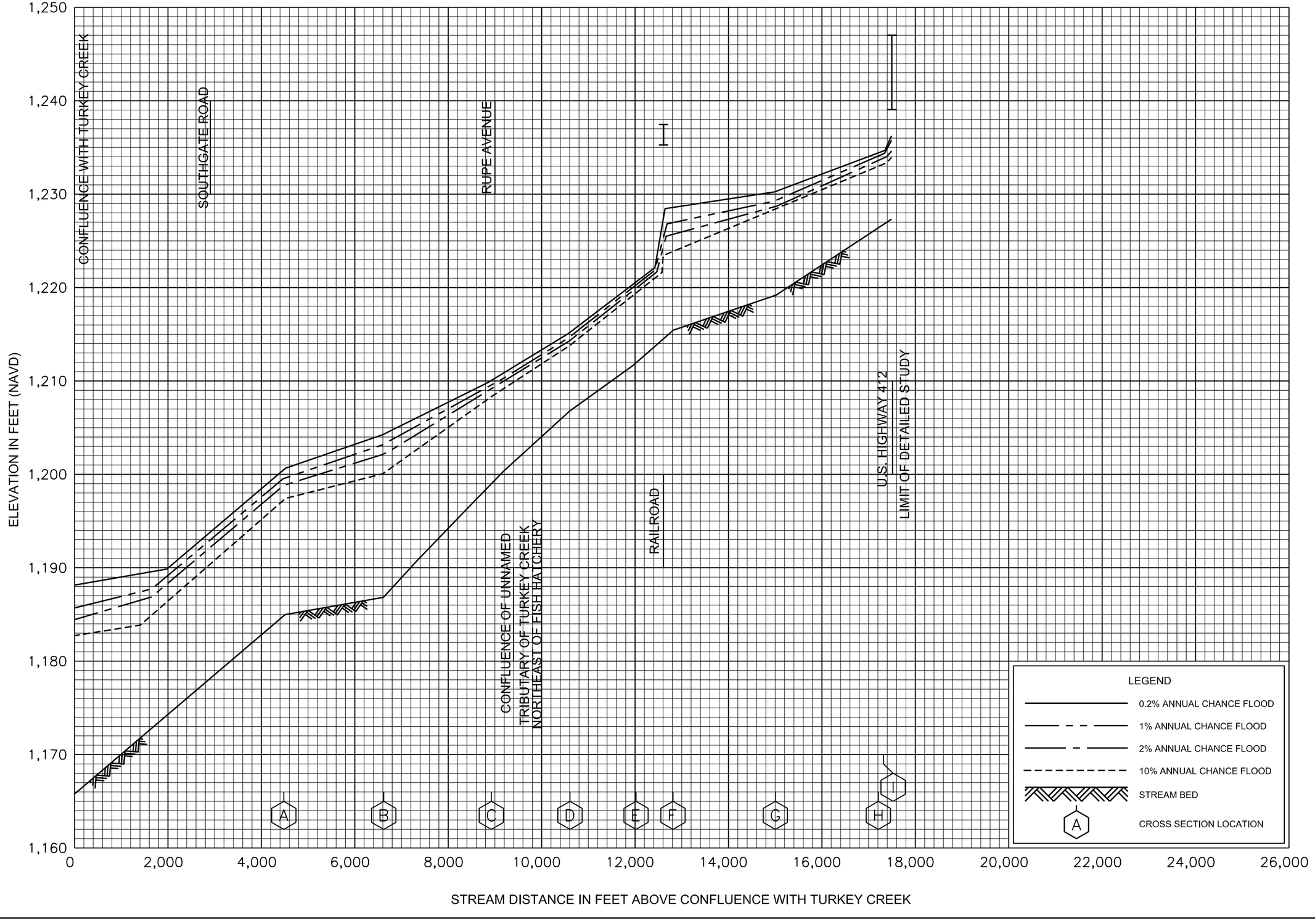
FLOOD PROFILES

UNNAMED TRIBUTARY OF RED ROCK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

69P



FLOOD PROFILES

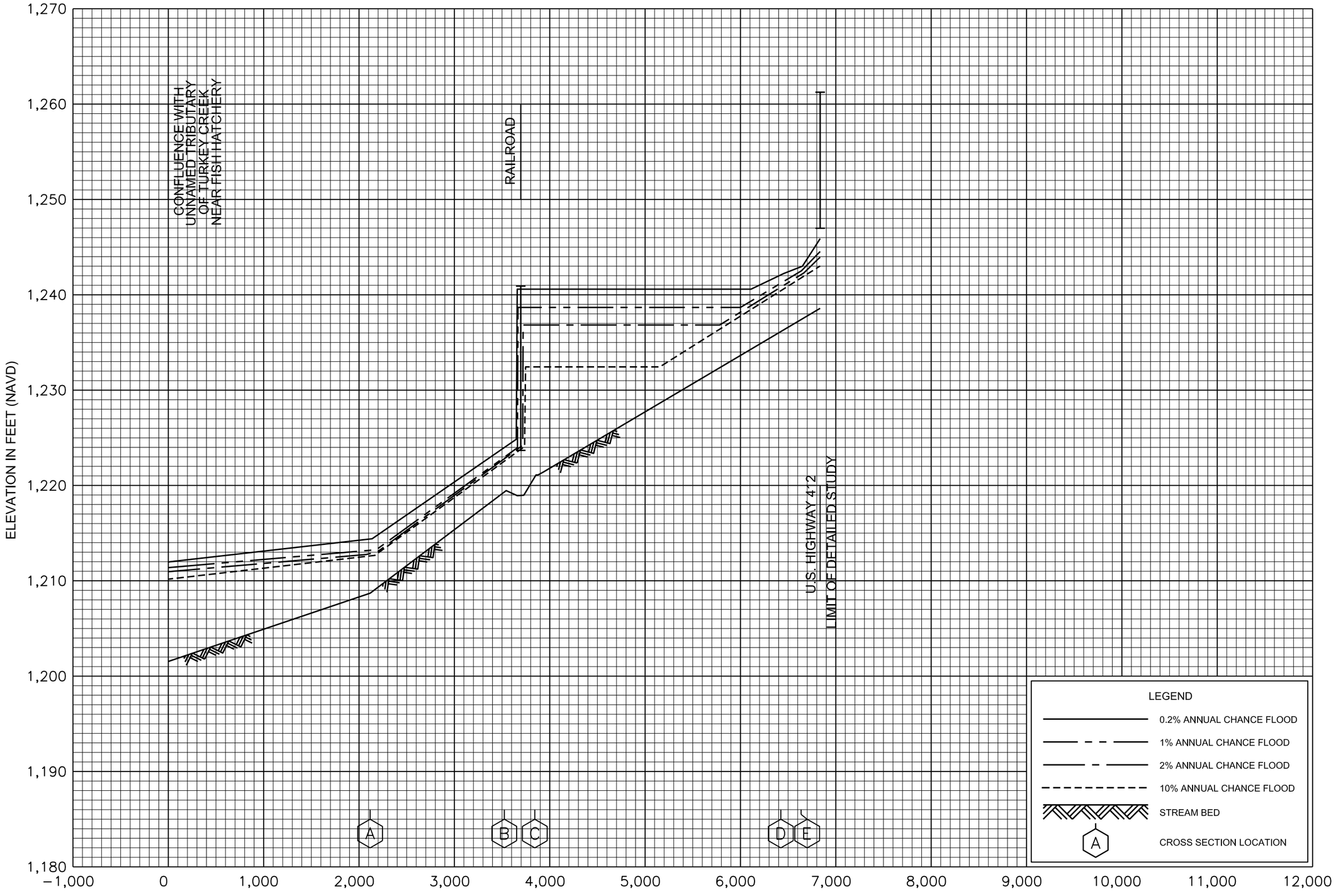
UNNAMED TRIBUTARY OF TURKEY CREEK NEAR FISH HATCHERY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

70P



FLOOD PROFILES

UNNAMED TRIBUTARY OF TURKEY CREEK NORTHEAST OF FISH HATCHERY

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

71P

FLOOD PROFILES

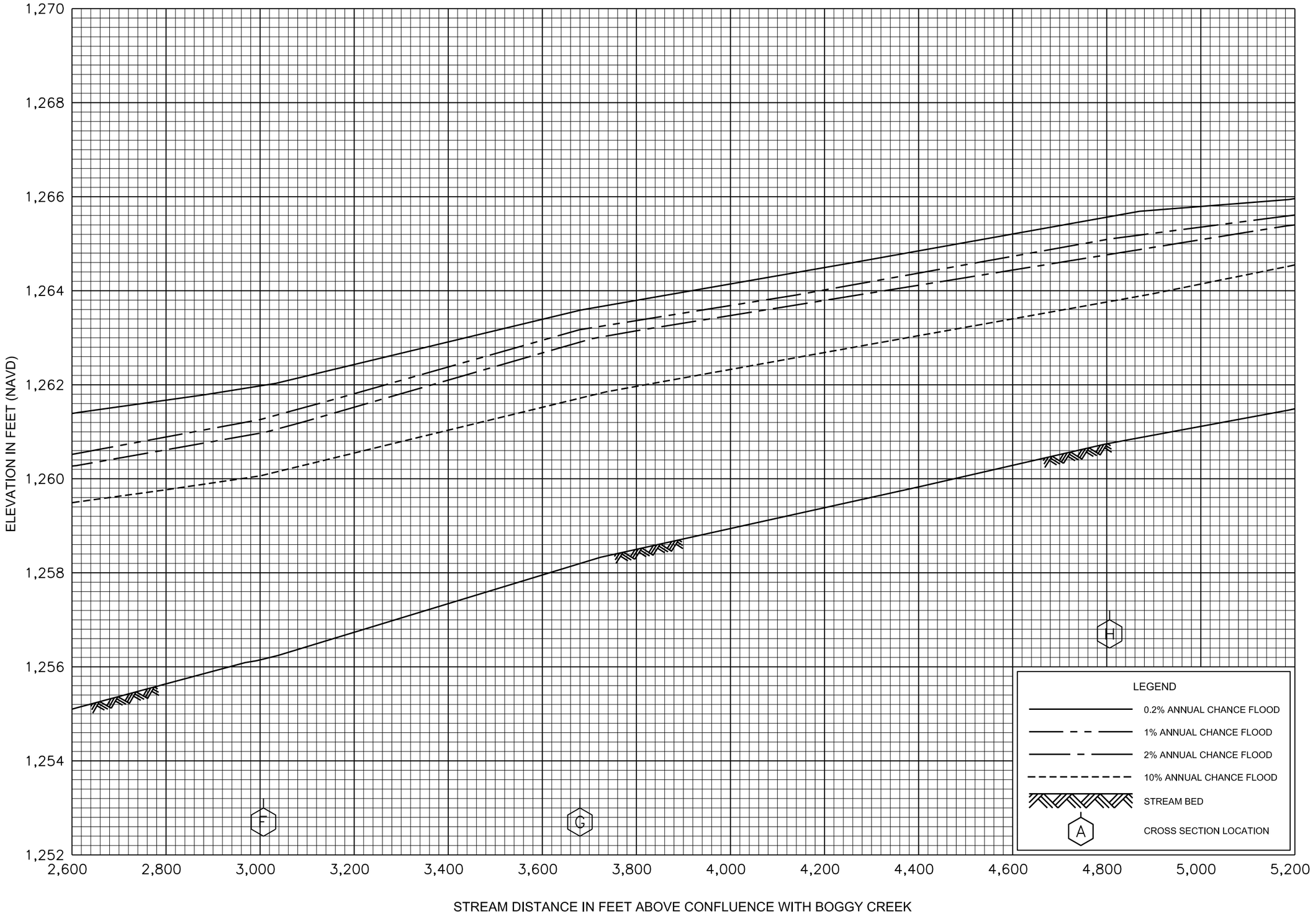
WEST BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

72P



FLOOD PROFILES

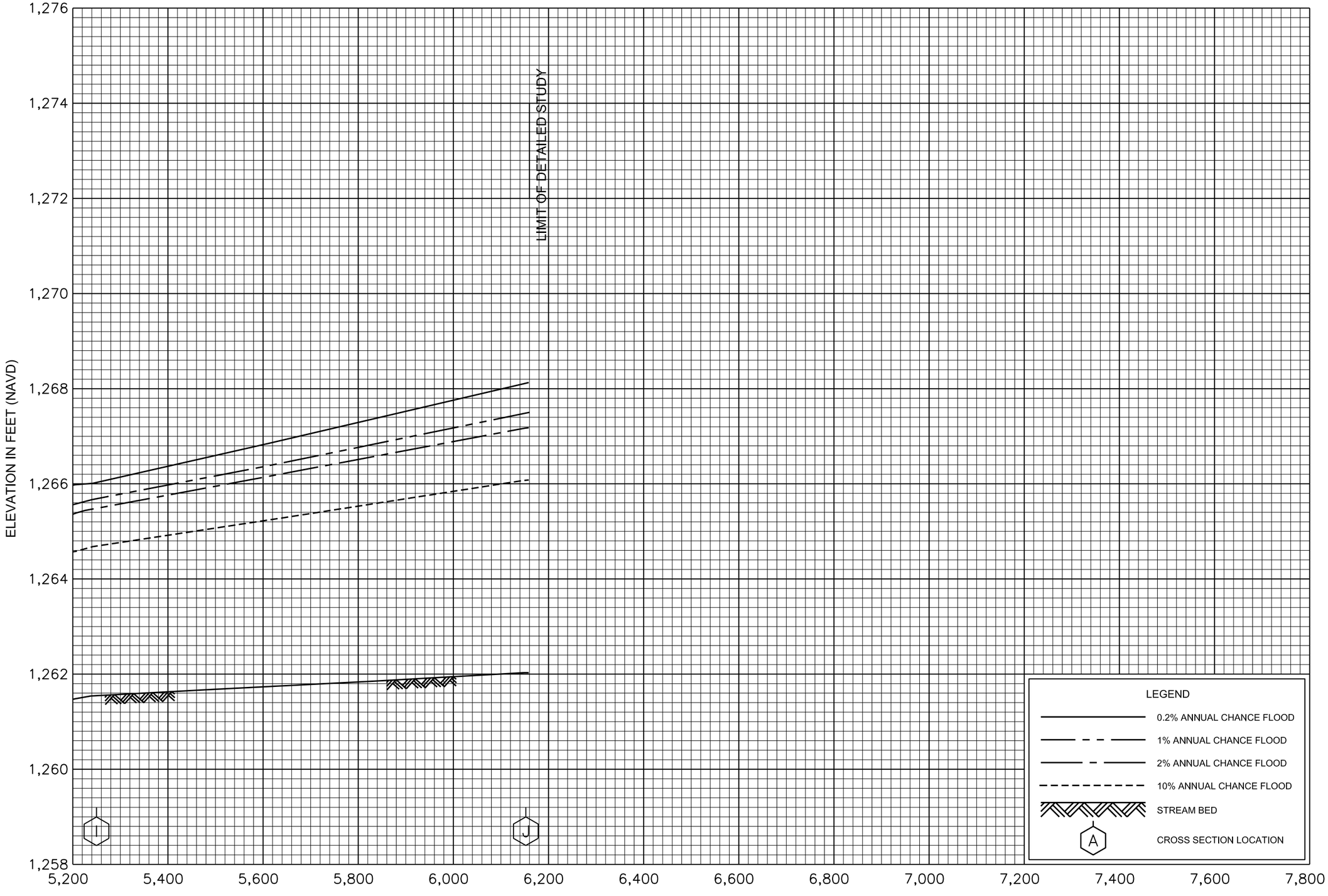
WEST BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

73P



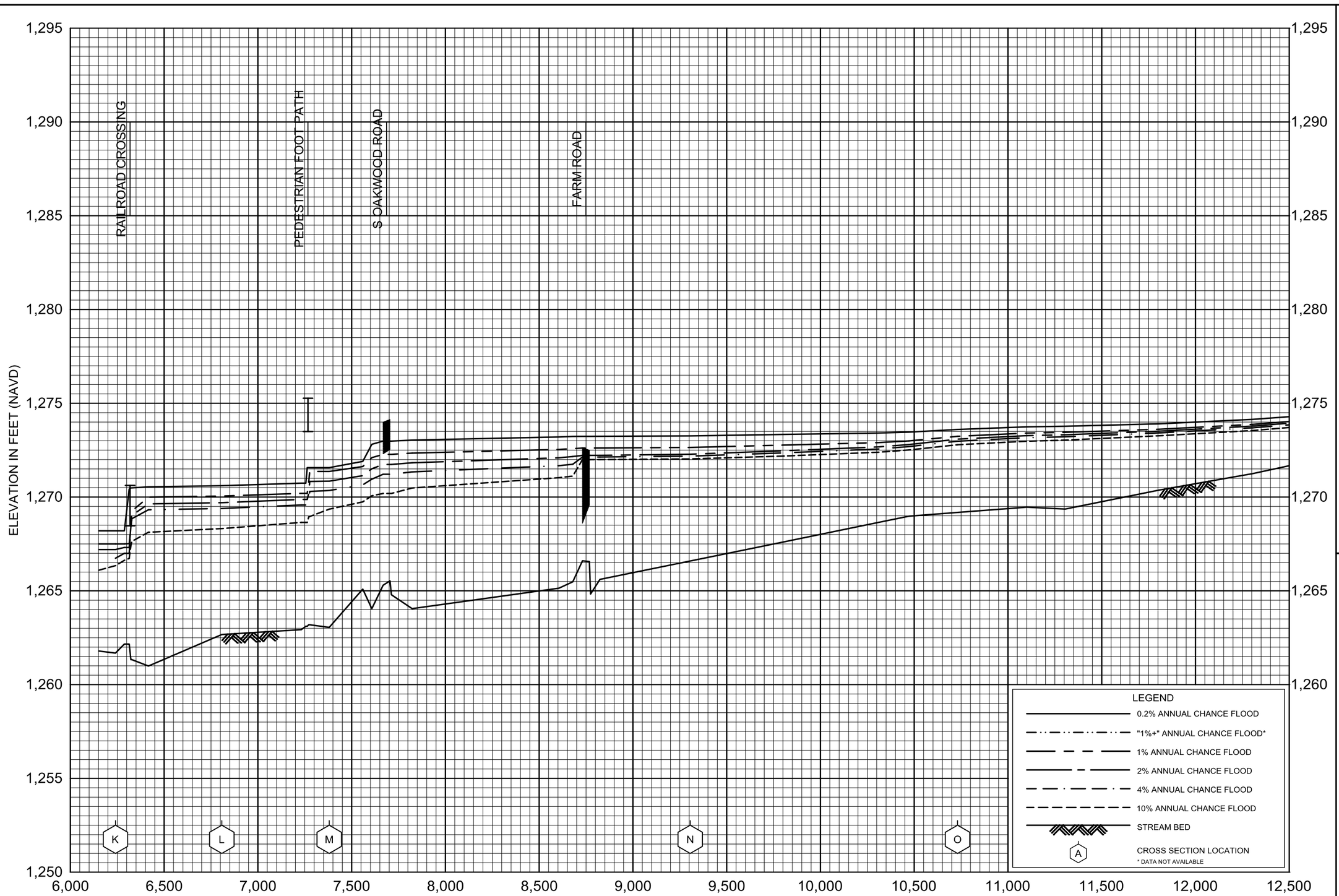
FLOOD PROFILES

WEST BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK
AND INCORPORATED AREAS

74P



FLOOD PROFILES

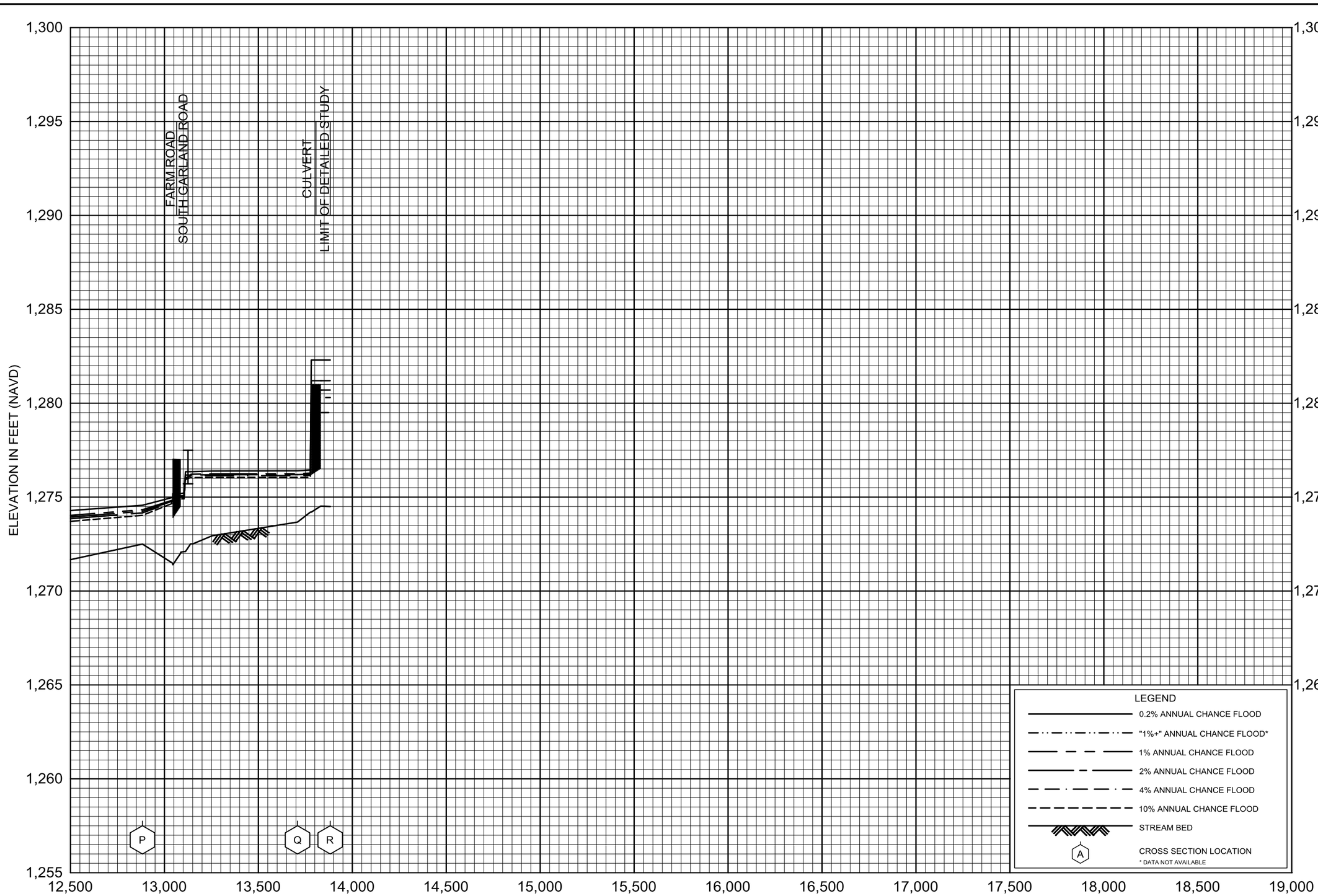
WEST BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

75P



FLOOD PROFILES

WEST BOGGY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

GARFIELD COUNTY, OK

AND INCORPORATED AREAS

76P

APPENDIX A

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Flood Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to Community Map History in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Non-Coastal Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was State Plane Oklahoma North (FIPS 3501) Feet. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by or created from data provided by the University of Oklahoma, Center for Spatial Analysis, and from the City of Enid, Oklahoma. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Garfield County, Oklahoma corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to page 2 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

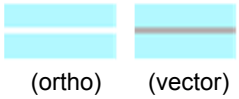
FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Garfield County.

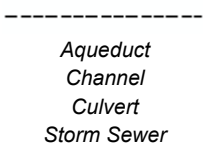
Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*

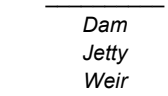
	Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)
Zone A	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
Zone AE	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone.
Zone AH	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
Zone AO	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
Zone AR	The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.

Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.
	Regulatory Floodway determined in Zone AE.
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood. **See Notes to Users for important information.**
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.
	Unshaded Zone X: Areas of minimal flood hazard.
FLOOD HAZARD AND OTHER BOUNDARY LINES	
	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet

GENERAL STRUCTURES

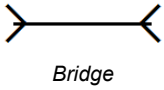


Channel, Culvert, Aqueduct, or Storm Sewer



Dam, Jetty, Weir

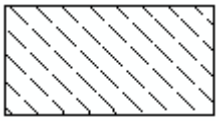
Levee, Dike, or Floodwall



Bridge

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): *CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.* ***See Notes to Users for important information.***

Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.

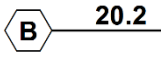


Otherwise Protected Area

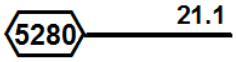
REFERENCE MARKERS

River mile Markers

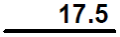
CROSS SECTION & TRANSECT INFORMATION



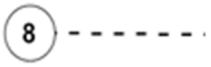
Lettered Cross Section with Regulatory Water Surface Elevation (BFE)



Numbered Cross Section with Regulatory Water Surface Elevation (BFE)



Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)



Coastal Transect

	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
513	Base Flood Elevation Line
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway
234	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
$^{42}76^{000m}$E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16’ 52.5”	Corner Coordinates (Latitude, Longitude)

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see www.fema.gov.

Table 6 is a list of the locations where FIRMs for Garfield County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Table 6: Map Repositories

Community	Building	Address	City	State	Zip Code
Breckenridge, Town of	Town Hall	215 East Don Kroll Street	Enid	Oklahoma	73701
Carrier, Town of	Town Hall	119 South Main Street	Carrier	Oklahoma	73727
Covington, Town of	Town Hall	224 West Main Street	Covington	Oklahoma	73730
Douglas, Town of	Highway Superintendent's Office	901 Failing Drive	Enid	Oklahoma	73701
Drummond, Town of	Town Office	424 Main Street	Drummond	Oklahoma	73735
Enid, City of	City Hall	401 West Owen K Garriott Road	Enid	Oklahoma	73701
Fairmont, Town of	Town Hall	Fairmont Road	Fairmont	Oklahoma	73736
Garber, City of	City Hall	437 Main Street	Garber	Oklahoma	73738
Garfield County Unincorporated Areas	Garfield County Courthouse	114 West Broadway, Room 105	Enid	Oklahoma	73701
Hillsdale, Town of	Town Hall	Main Street	Hillsdale	Oklahoma	73743
Hunter, Town of	Town Hall	102 South Kansas Street	Hunter	Oklahoma	74640
Kremlin, Town of	Town Hall	303 Main Street	Kremlin	Oklahoma	73753
Lahoma, Town of	Town Hall	203 Main Street	Lahoma	Oklahoma	73754
North Enid, Town of	Town Hall	404 Kansas Avenue	North Enid	Oklahoma	73701
Waukomis, Town of	Town Hall	121 North Main Street	Waukomis	Oklahoma	73773

Table 7: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
TOWN OF BRECKENRIDGE	400530	11050002 11060006	40047C0210E 40047C0220E 40047C0230E 40047C0250E	
TOWN OF CARRIER	400526	11050002	40047C0175E	
TOWN OF COVINGTON	400362	11050002	40047C0425E	
TOWN OF DOUGLAS	400531	11050002	40047C0400E	
TOWN OF DRUMMOND	400527	11050002	40047C0325E	
TOWN OF FAIRMONT	400528	11050002 11060006	40047C0400E	
CITY OF ENID	400062	11050002 11060004 11060006	40047C0185F 40047C0190E 40047C0191F 40047C0192F 40047C0193F 40047C0194F 40047C0205E 40047C0210E 40047C0215E 40047C0220E 40047C0330E 40047C0332E 40047C0335E 40047C0355E 40047C0360E	

CITY OF GARBER	400380	11060006	40047C0275E	
GARFIELD COUNTY UNINCORPORATED AREAS	400473	11050002 11050003 11060004 11060006	40047C0025E 40047C0050E 40047C0075E 40047C0100E 40047C0125E 40047C0150E 40047C0165E 40047C0170E 40047C0175E 40047C0180F 40047C0185F 40047C0190E 40047C0194F 40047C0205E 40047C0210E 40047C0215E 40047C0220E 40047C0230E 40047C0250E 40047C0275E 40047C0300E 40047C0310E 40047C0325E 40047C0330E 40047C0332E 40047C0335E 40047C0340E 40047C0345E 40047C0355E 40047C0360E 40047C0375E 40047C0400E 40047C0425E 40047C0450E 40047C0475E 40047C0500E 40047C0525E 40047C0550E 40047C0575E 40047C0600E	
TOWN OF HILLSDALE	400529	11060004	40047C0050E	

TOWN OF HUNTER	400286	11060006	40047C0100E	
TOWN OF KREMLIN	400293	11060004	40047C0075E	
TOWN OF LAHOMA	400294	11050002	40047C0165E	
TOWN OF NORTH ENID	400425	11050002	40047C0205E 40047C0215E	
TOWN OF WAUKOMIS	400338	11050002	40047C0335E 40047C0345E	